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RESEARCH PROJECT INITIATION

Date: October 3, 1972

Project Title: Small-Scale Research Projects in Transportation

Project No: E-20-635

Principal Investigator: Dr. D. O. Covault

Sponsor: Atlanta University

Agreement Period: From August 1, 1972 Until September 30, 1973

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Sponsor Contact Person (s): Mr. Sid Davis
Director, Urban Transportation Project
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Assigned to: School of Civil Engineering

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RA-3 (6-71)

GEORGIA INSTITUTE OF TECHNOLOGY

OFFICE OF RESEARCH ADMINISTRATION

RESEARCH PROJECT TERMINATION

Date: January 4, 1974

Project Title: Small-Scale Research Projects in Transportation

Project No: E-20-635

Principal Investigator: Dr. D. O. Covault

Sponsor: Atlanta University

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RA-4 (5/70)

STUDY OF AIRPORT USER ATTITUDES AND CHARACTERISTICS IN RELATION TO MODAL CHOICE AT THE ATLANTA AIRPORT

A Paper

Presented to

Dr. D. O. Covault

By

Norman Steinman

Georgia Institute of Technology

May 28, 1973

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CHAPTER I

INTRODUCTION

Perhaps one of the most crucial phases of transportation analysis involves the proper prediction of the choice of mode to be used by the traveller. The problem lies in predicting accurately changes in patronage and usage caused by changes in the supply and technology of transportation. The problem becomes especially difficult where new transportation systems are proposed so that no comparison is available with the existing situation.

In this report, an attitudinal survey form will be developed which can be used in modal-split forecasting. Specifically, this survey form should provide the potential users' input into the decision to extend the Metropolitan Atlanta Rapid Transit Authority (MARTA) rapid transit line out to Atlanta's Hartsfield International Airport.

The development of the survey form will proceed in the following manner. First, the theory of attitude-behavior models will be reviewed in order to present both the advantages and disadvantages of analyzing traveller attitudes to predict a modal split. Included in this chapter will be a listing of various modal factors or characteristics which have been found important in past studies.

Second, the actual situation in Atlanta will be presented. This presentation will include a review of the data applicable to this attitudinal survey which was generated by the 1968 Atlanta Airport Transportational Study. Future plans for both the Airport layout and the MARTA system will also be presented. All of these local factors will, of course, have an important effect on the wording of the survey questions

and the data which the survey will need to provide.

Third, the actual survey form will be prepared based on the information reviewed in the previous chapters. Included with the formulation of the form itself will be a discussion as to why each particular set of questions or factors was selected for inclusion in the survey form. Also discussed will be the manner in which the survey of both passengers and employees should be carried out in order to receive the response from an adequate sample of the airport population.

Fourth, the preliminary form will be sent out for review to various planning agencies in Atlanta in order to get their reactions regarding the applicability and validity of the survey questions. These agencies include both those who will be directly involved in making the decision to extend the MARTA line and those who have had previous experience in conducting surveys similar to this one. When these agencies have returned their criticisms of the preliminary form, the necessary corrections will be made so that the final form will be one that will be useful for acquiring the data required by the public agencies involved in this decision.

CHAPTER II

ATTITUDE - BEHAVIOR SURVEYS

There are several approaches to forecasting travel demand for a totally new system. In general, these approaches can be classified into two groups - the travel needs simulation method and the market analysis method.

The first technique the analyst has available for his use involves considerable data that indicate what the potential customers have already done in a case where a similar choice was involved. This approach is based on manifest behavior and preferences, consciously or unconsciously made. If, then, the analyst succeeds in relating the manifest choice with the circumstances within which the choice was made and with the relative characteristics of the competing systems, he can assume that in similar cases in the future the potential customer will act the same way. This approach is the essence of modal-split analysis and projection carried out by most urban transportation studies.

In contrast, the market analysis approach would proceed with one of the many possible forms of questionnaires on the basis of which the potential customer is asked to express an a priori judgement and preference in case the new system becomes available to him. The exercise is accompanied by a brief description of the new system and with a request for the respondent to express a choice.

Attitude - Behavior Theory

The development of attitude-behavior models and surveys rests on three assumptions. These are:

1. People have attitudes towards the various characteristics of travel modes,
2. These attitudes can be described in a quantitative manner (such as revealed by attitude surveys), and
3. These attitudes govern the behavior of people.[1]

The choice of a transportation mode for making a given trip is basically equivalent to choosing a given combination of goods (money) and travel time to make the trip required. The chosen combination of goods and time to make a given trip (modal choice) is a function of the cost of the travel goods or services and of the value of the time as input in the given trip. The marginal value of time as input in a given trip is partly a function of the circumstances under which the time must be spent, i.e., it is a function of the comfort of the trip. For example, if one mode is faster and more comfortable, but also more expensive than the other mode, it will be chosen only if the value of the time saved plus the value of the added comfort during the remaining time of the trip is at least as high as the additional cost.

Recently proposed modal-choice models have suggested that the criteria of traveller modal choice seem to depend on two components of perceived system attributes:

1. The importance placed on a given system attribute by a particular traveller for a particular trip, and
2. The degree of satisfaction this traveller has with the ability of each alternative mode to fulfill the requirements of each system attribute. Travel behavior is thus identified not only as a function of the traveller's social and economic

---

[1] See References Cited, pp. 53-54.

characteristics but also of the traveller's perception of the quality of the transportation services provided.[2]

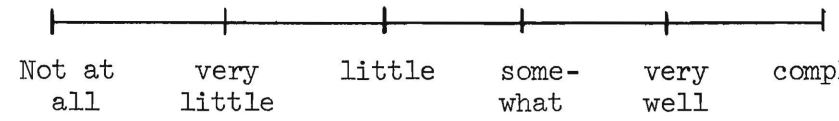
One type of attitudinal-behavior model which has been devised is called a comparative acceptance model. The model works in the following manner. First, the individual characteristics of a mode are given values on a common acceptance scale (as determined by an attitude survey). Second, the total acceptance of each alternative mode is computed. Knowing the mean and variance of the acceptance of each mode, the probability of any mode being the most acceptable can be calculated. Thus, the proportional choice between modes is obtained.[3]

One of the most sophisticated questionnaires in this group is the one that is usually called a discriminant questionnaire. In this type of survey, the potential customer is asked to express an incremental like or dislike for the various characteristics of the new system as part of a technique usually referred to as semantic differentials. Variations of this method are used by most major manufacturing companies in testing what their new products will encounter in the market or how their new products must be improved in order to increase their acceptance by the consumers.[4]

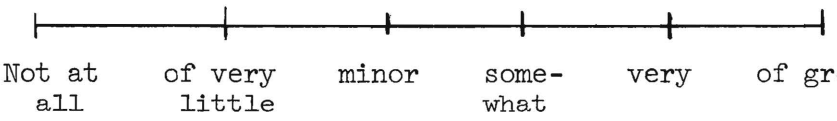
This semantic differential method, which can be used to determine an individual's attitude in determining modal choice, is based on determining the importance of selected variables to the individual in making his modal decision. Obviously, a characteristic which is held in high importance will influence the choice of mode more than if such a characteristic were considered to be of low importance.

The semantic scaling or semantic differential technique works in the following manner. First, the respondent is asked a question of the following type: How satisfied were you in your last trip (on mode A)

with the cleanliness of the vehicle? The following scale is then provided on the survey form so that the respondent can indicate his choice (either by placing a checkmark or circling the appropriate number) as to the importance of each factor -



The respondent is then asked the following question: How <u>important</u> is it for you to ride in a clean vehicle? The response scale is similar to the one previously illustrated -



The individual thus rates the proposed mode relative to some concept he holds about an "ideal" mode. The theory assumes that an individual chooses the mode which is closest to his "ideal" mode. Closest is defined as the ideal less the actual rating, for each characteristic's importance summed over all characteristics.[5]

By using this scaling technique, the analyst is thus able to identify those characteristics which potential users of the new system consider most important. The feasibility of constructing the new system or of improving it in order to attract patronage can thus be analyzed using the data available from the attitude survey.

In short, the traveller's choice is based upon his perceptions of the characteristics of the transportation system and of the ability of various types of trips to satisfy his needs and wants. Changes in choice can be brought about either by actual changes in the transportation system or by changes in the traveller's perception of his alternatives, as through advertising.

Modal Characteristics

The first step necessary to obtain attitudes is to formulate questions that list varying degrees of response for an anticipated respondent attitude about existing transportation.

The next step in the process involves the selection of a set of characteristics or modal attributes which will be rated as to their importance by the respondent in making his modal choice. These must be measurable in terms of a user's perception. Factors which should be considered include: dependability, cost, cleanliness, comfort, safety from crime, safety from accident, privacy, speed, length of trip (time), probability of getting a seat, protection from weather, waiting time (including need to transfer), parking, directness of trip, and convenience.[6]

A study conducted in Boston found such factors as cost, convenience, comfort, status, parking, flexibility, and traffic congestion to be among the more important factors in modal choice.[7]

A University of Michigan study cites the following factors in their discussion of modal choice - frequency of service, need to transfer, flow of traffic, speed, convenience, comfort, trip distance, and crowdedness.[8]

A Stanford Research Institute study considered these factors - tension (fatigue), sense of freedom, safety, urgency of the trip, distance, operating cost, scenery, travel time, traffic flow, and ease of driving as important in predicting modal choice.[9]

Factors which have been found important in predicting passenger modal choice at airports are travel times, fares, frequency of service, locational convenience of airport service terminals, baggage handling service, general comfort and amenities, and degree of familiarity with the services available.

Weaknesses of the Theory

Systematically conducted attitudinal survey research in connection with the actual planning of transportation facilities and services remains a relatively unorthodox approach. Despite a recognized fundamental requirement for assessing user attitudes, preferences, and behavioral patterns to provide the mechanism for arriving at human-oriented criteria for transit system design and operation, many transportation planners remain skeptical regarding the validity of the survey for patronage forecasting.

First, the questionnaire method has been critized on the basis that since the respondents are not making an actual decision, they may not answer the questionnaire truthfully. However, the results of studies conducted in Baltimore and Philadelphia suggest a modest positive linkage between expressed attitudes and reported behavior.[10]

Other criticism has been directed at the attitudinal survey. The respondents may give "socially acceptable" answers. Also, some questionnaires may be biased towards one end of the semantic differential by "yea or nay-saying". Furthermore, it has been observed that people will tend to rationalize their actual choice by giving responses which bias the results in such a way as to justify their actual mode choices. Biases also exist in the form of an attitudinal bias toward a particular mode (bad transit reputation), a reporting bias (based on rationalizations), a normalizing bias (reporting results normally experienced instead of actually experienced), and an ignorance bias (a mode with which an individual has limited or no experience is not likely to evoke an accurate response).[11]

CHAPTER III

ACCESS TO THE ATLANTA AIRPORT

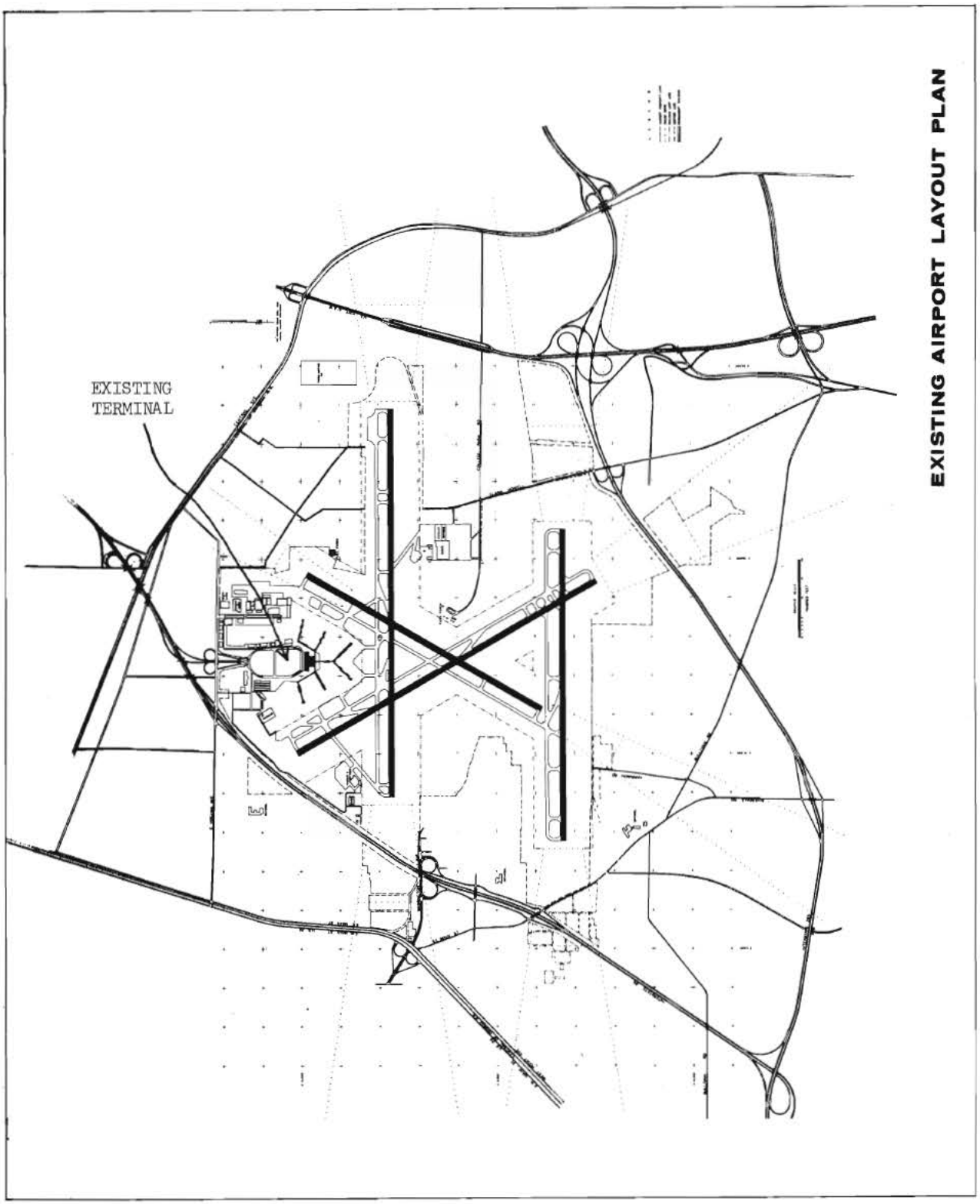
William B. Hartsfield International Airport, presently the third busiest airport in the United States in terms of annual aircraft and passengers movements, is located some nine miles south of downtown Atlanta. Although the 3700 acre airport is bounded on three sides by Interstate Highways (75, 85, 285), and on one side by a local street (Virginia Avenue), the primary access to the airport terminal is by Interstate 85 (Airport Connector). The terminal area is linked to I-85 by an 1800 foot long expressway spur. This roadway connects directly with the airport road circling the self service parking field. See Figure 1 for the existing airport layout.

At the present time the following access modes are available to passengers and employees at the Atlanta Airport: private autos, rental cars, airport limousines, public buses (MARTA), motel and courtesy cars, and taxis.

Airport Population Characteristics

Total airport populations for the average day in 1966-67 in Atlanta were as follows: passengers - 29,600, employees - 12,000, and visitors - 37,000 for a total of 78,300. During the peak day, these figures increased to 59,200 passengers, 14,400 employees, 91,500 visitors, and 165,100 total. Because each employee and visitor accounts for two access trips (arriving and departing) as compared to only one for passengers, their importance in access flow is more pronounced than would be indicated from a study of the airport population alone. Whereas

Figure 1



visitors comprise 33% of the airport population on an average day, they account for 45% of the access trips to and from the airport. Similarly, employees constitute 22% of the airport population but 29% of the access trips. Airline passengers, who constitute 45% of the airport population account for only 26% of the ground access trips.[12]

In 1968, as part of the Atlanta Airport Transportation Study, passengers and employees at the airport were surveyed regarding their transportation mode, trip purpose, and other personal data.[13]

Analysis of the survey data indicated that 41% of all passengers headed for the central business district, and another 46% were headed for the area inside the Perimenter Highway (I-285). The area outside the Perimeter Highway (I-285), constituting more than 35% of the Atlanta area population, does not attract or produce the same percentage of airport trips. First of all, only 37% of the Atlanta air passengers are Atlanta residents. Second, 60% of all air passengers are in Atlanta on business trips and would thus not be attracted to the residential areas, but are attracted to the hotels near the CBD. (Men between the ages of 21-45 predominate the Atlanta Airport passenger population.)

The private car is by far the most predominant vehicle for the air passengers, being used by 55% for access to and from the airport. Vehicle counts during the week also indicated that the "kiss and ride" drop-off technique was more common than the "meet and greet" pick-up method. While one can easily plan for the scheduled departure, the difficulty in meeting an unplanned or delayed arrival somewhat increases the probability that the deplaning passenger will use public transportation (now mainly limousines or taxis).

The Atlanta Airport employed over 10,000 persons at the time of the survey in 1968. (By 1980, employment is expected to exceed 30,000

persons). In the survey, 56% of the employees indicated that they live inside the Perimeter Highway (I-285), while another 37% indicated that they live south of the airport. Because the airport operates "around the clock" seven days a week and places of employment are spread over a large area, employees show an overwhelming preference (98.2%) for their cars as their mode of travel to and from work.

Future Access

In 1968 plans were presented for a new terminal with better access capabilities to be built at the Atlanta Airport. The lean economic years which followed for the airlines, however, have delayed the implementation of the project.

As envisioned in the 1968 plan, the 1.5 mile-long terminal is to be situated between the existing parallel runways at a cost of $300 million. A multi-lane roadway system is to be constructed in order to provide access to the terminal from all four sides of the airport. At present, road access is available from only one side of the airport (to I-85). The airport roadway system was designed to tie in to a system of new Atlanta toll roads. However, at least one toll road will not be built and another project is now involved in litigation due to neighborhood opposition. See Figure 2 for the proposed airport layout and Figure 3 for a map of the Atlanta Tollway System.

The airport plan was also based on the construction of a rapid transit system that would serve the airport, either with an airport station or with shuttle buses to the nearest station. The system approved by the voters in November, 1971 is shown in Figure 4. The uncertainty over the construction of the new terminal and the defeat of the rapid transit system in Clayton County have forced MARTA to terminate their lines, at least for the present, at the College Park and Atlanta Airport

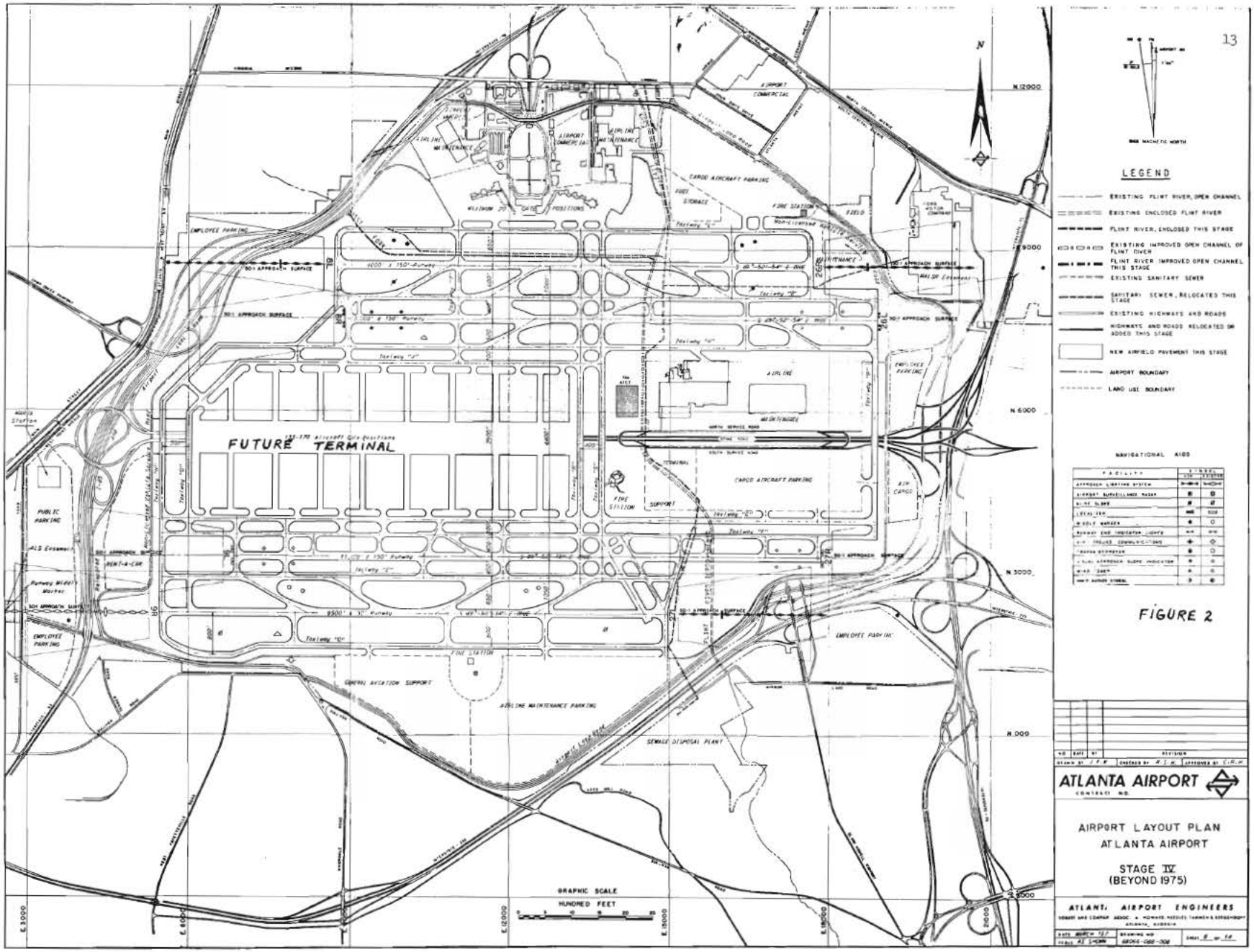
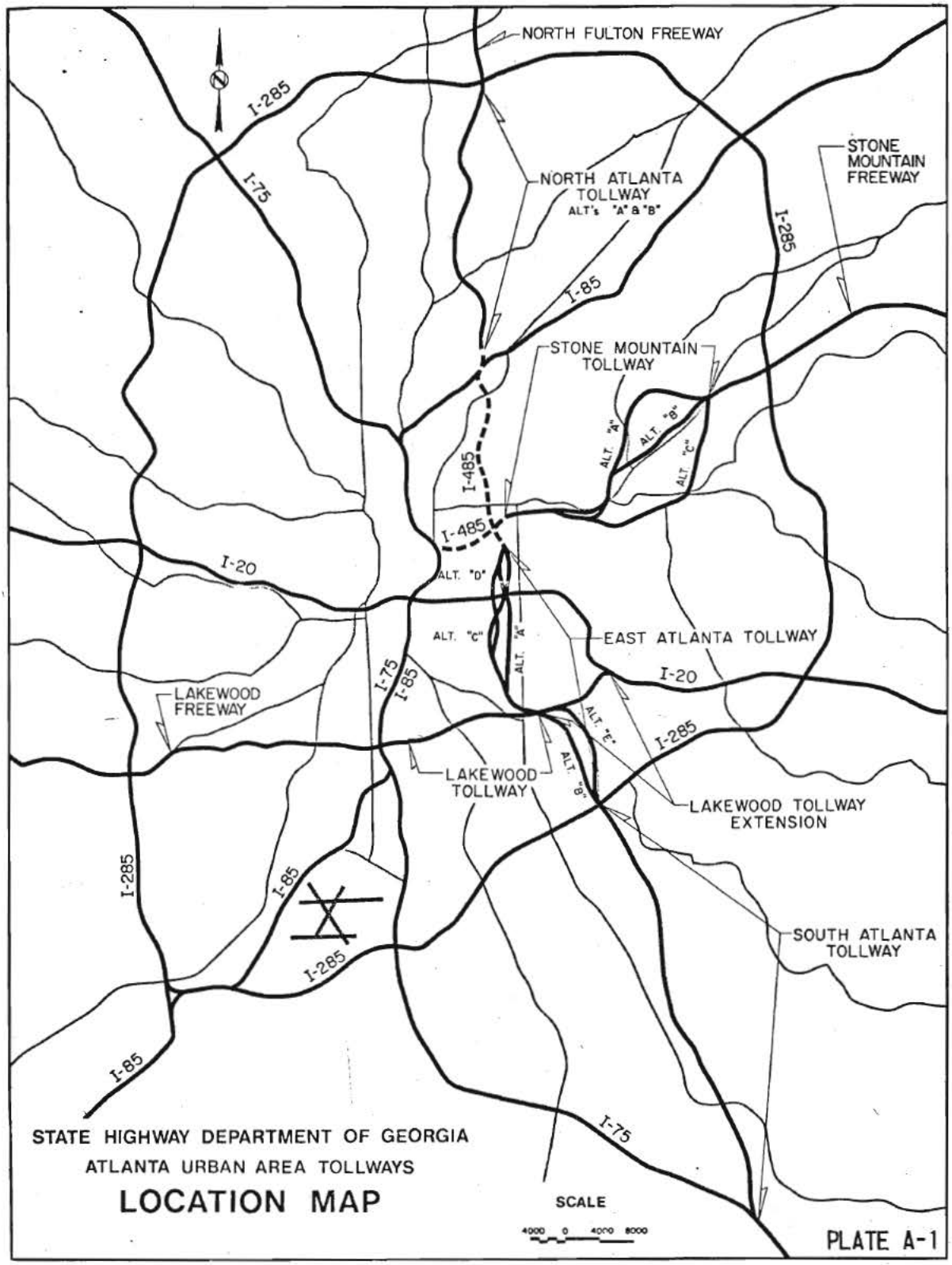

13
LEGEND
EXISTING FLINT RIVER, OPEN CHANNEL
EXISTING ENCLOSED FLINT RIVER
FLINT RIVER, ENCLOSED THIS STAGE
EXISTING IMPROVED OPEN CHANNEL OF FLINT RIVER
FLINT RIVER IMPROVED OPEN CHANNEL THIS STAGE
EXISTING SANITARY SEWER
SANITARY SEWER, RELOCATED THIS STAGE
EXISTING HIGHWAYS AND ROADS
HIGHWAYS AND ROADS RELOCATED OR ADDED THIS STAGE
NEW AIRFIELD PAVEMENT THIS STAGE
AIRPORT BOUNDARY
LAND USE BOUNDARY
NAVIGATIONAL AIDS
FIGURE 2
FUTURE TERMINAL
GRAPHIC SCALE
HUNDRED FEET
ATLANTA AIRPORT
AIRPORT LAYOUT PLAN
ATLANTA AIRPORT
STAGE IV
(BEYOND 1975)
ATLANTA AIRPORT ENGINEERS

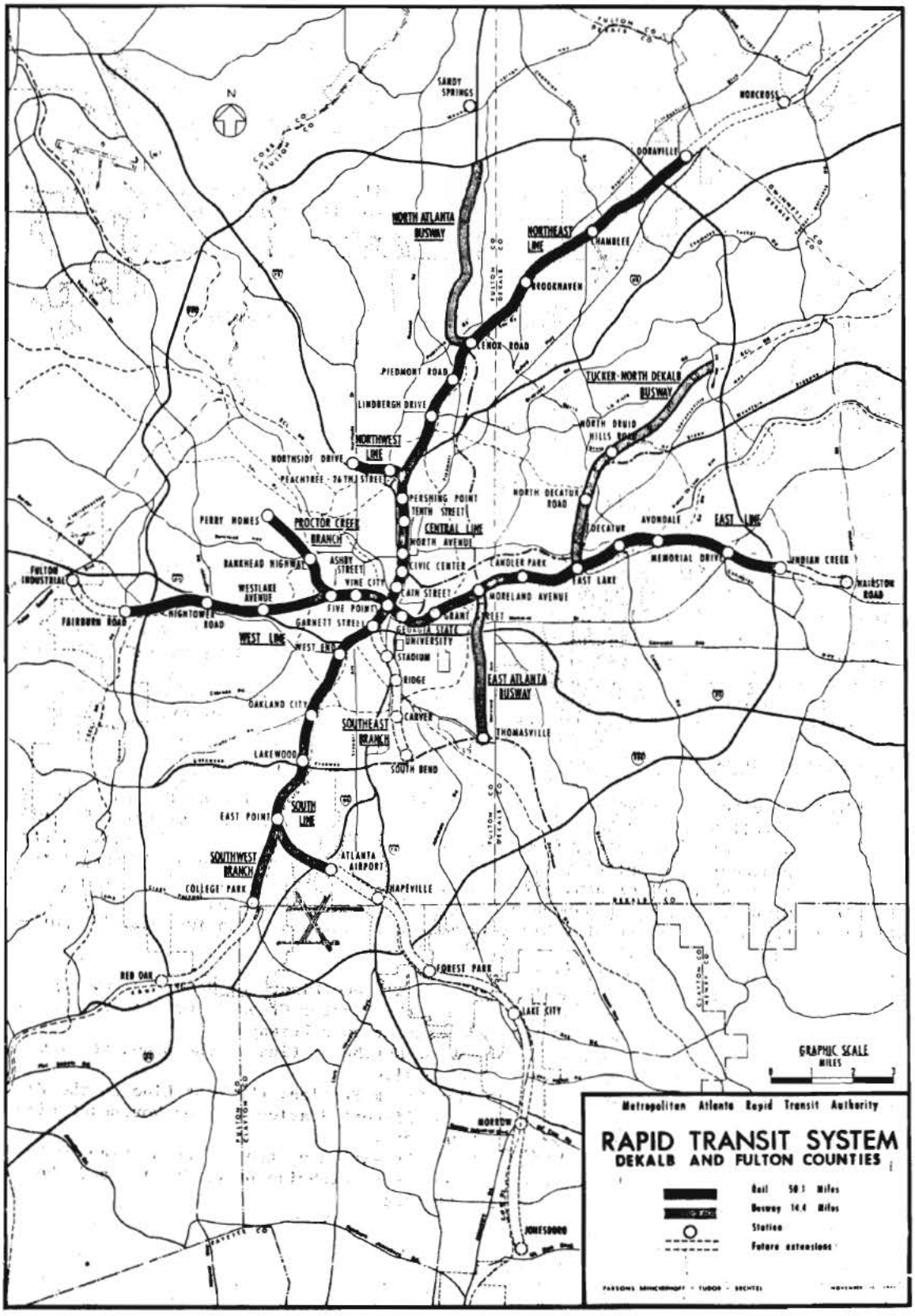
Figure 2

Figure 3


NORTH FULTON FREEWAY
I-285
I-75
NORTH ATLANTA TOLLWAY
ALT's "A" & "B"
STONE MOUNTAIN FREEWAY
I-285
I-85
STONE MOUNTAIN TOLLWAY
ALT. "A"
ALT. "B"
ALT. "C"
I-485
I-485
ALT. "D"
I-20
ALT. "C"
ALT. "A"
EAST ATLANTA TOLLWAY
I-20
I-75
I-85
LAKEWOOD FREEWAY
ALT. "E"
ALT. "B"
I-285
LAKEWOOD TOLLWAY
LAKEWOOD TOLLWAY EXTENSION
I-285
I-85
I-285
SOUTH ATLANTA TOLLWAY
I-85
I-75
STATE HIGHWAY DEPARTMENT OF GEORGIA
ATLANTA URBAN AREA TOLLWAYS
LOCATION MAP
SCALE
4000 0 4000 8000
PLATE A-1

Stations. These stations, as now planned, will serve mainly the commuter traffic from the South Fulton and Clayton areas. The Atlanta Airport Station will be located 8.15 miles from the CBD and .7 miles from the Airport terminal. The College Park Station will be located 8.54 miles from the CBD and .9 miles from the proposed new terminal. Shuttle buses are scheduled to operate between the present terminal and the Atlanta Airport Station at 10 minute headways. Travel times from the Airport to the CBD have been scheduled at 12 minutes including the transfer time from the bus to the rapid rail at the transit station.

Figure 4


N
SANDY SPRINGS
NORCROSS
DORAVILLE
NORTH ATLANTA BUSWAY
NORTHEAST LINE
CHAMBLEE
BROOKHAVEN
LENOX ROAD
PIEDMONT ROAD
LINDBERGH DRIVE
TUCKER-NORTH DEKALB BUSWAY
NORTH DRUID HILLS ROAD
NORTHWEST LINE
NORTHSIDE DRIVE
PEACHTREE - 7th STREET
PERSHING POINT
TENTH STREET
CENTRAL LINE
NORTH AVENUE
NORTH DECATUR ROAD
DECATUR
AVONDALE
EAST LINE
PERRY HOMES
PROCTOR CREEK BRANCH
BARNHEAD HIGHWAY
ASHBY STREET
CIVIC CENTER
CANDLER PARK
MEMORIAL DRIVE
INDIAN CREEK
HAIRSTON ROAD
FULTON INDUSTRIAL
WESTLAKE AVENUE
VINE CITY
CAIN STREET
EAST LAKE
MORELAND AVENUE
FIVE POINTS
FAIRBURN ROAD
NIGHTOWER ROAD
GARNETT STREET
GRANT STREET
GEORGIA STATE UNIVERSITY
WEST LINE
WEST END
STADIUM
RIDGE
EAST ATLANTA BUSWAY
OAKLAND CITY
CARVER
SOUTHEAST BRANCH
THOMASVILLE
LAKEWOOD
SOUTH BEND
EAST POINT
SOUTH LINE
SOUTHWEST BRANCH
ATLANTA AIRPORT
COLLEGE PARK
HAPEVILLE
RED OAK
FOREST PARK
LAKE CITY
MORROW
JONESBORO
GRAPHIC SCALE
MILES
Metropolitan Atlanta Rapid Transit Authority
RAPID TRANSIT SYSTEM
DEKALB AND FULTON COUNTIES
Rail 50.1 Miles
Busway 14.4 Miles
Station
Future extensions
PARSONS BRINCKERHOFF - TUDOR - BECHTEL

CHAPTER IV

FORMULATION OF THE SURVEY FORM

In order to begin the development of the survey form itself, the author first conducted an extensive literature search to familiarize himself with the theory of attitudinal-behavior models and the accompanying questionnaires. A short review of attitudinal-behavior models has already been included in Chapter II.

The author also attempted to analyze other surveys which may have been conducted to predict future patronage in a new rapid transit line or extension. By doing so, the author wished to identify the modal attributes which had been considered by other researchers preparing an attitudinal survey form and then proceed to select those most applicable to the Atlanta situation as described in Chapter III. First, the author found that no attitudinal surveys had been conducted at airports in Cleveland, Boston, or New York before mass transit service (rapid rail or subway) had been extended out to those airports. Second, the author did find two complete attitudinal survey forms which had been designed to improve transportation services for the work trip. These researchers planned to upgrade transit service by discovering which modal attributes were considered most important by those persons interviewed in the survey. One survey, which was formulated by members of the Transportation Research Department of General Motors Research Laboratories, is included in this report as Appendix A.[14] Further mention will be made in this discussion of the questions and modal characteristics tested which are contained in this particular survey form.

Survey Criteria

Public attitude surveys can perhaps help to maintain a much-needed dialogue between transportation users and administrators. The survey can provide a ready means of making the average citizen more a part of the planning process.

In order to have this dialogue regarding the Atlanta situation, the following criteria were established for the formulation of the survey form:

1. Keep the survey form to a minimum length,
2. Make the questions asked as relevant as possible to make the interviewee respond in a responsible manner and yet have the interviewer acquire the required data,
3. Computer-code the survey form to facilitate analysis,
4. Defer personal questions until the end of the survey so as to decrease the number of persons refusing to participate,
5. Assure the interviewee that the information provided by him would remain confidential,
6. Analyze those modal factors which will apply under the present Airport expansion and MARTA System plans.

Survey Sampling and Distribution

Two survey forms have been developed for use at the Atlanta Airport - one for passengers, and one for employees. A survey of visitors at the airport will not be attempted. The experiences of other researchers who have conducted surveys indicate that it is extremely difficult to conduct a survey of visitors in a manner that will allow them enought time to carefully answer all the questions and at the same time provide the agency conducting the survey with a high rate of return of completed questionnaires.

The passenger survey should be conducted on board the aircraft which will land or take off at the Airport. In this manner, the respondents will have sufficient time and a comfortable setting in which to answer all the questions carefully. This method was used by the Atlanta Airport Transportation Study survey in 1968. (See Appendix B).

Different trip purposes will be more in evidence for certain days of the week. In order to acquire data that would be valid for the "average" week a 20% random sample of flights should be selected daily for a Monday, Wednesday, and Saturday. The Monday sample would result in a greater proportion of business trips, the Wednesday sample would provide a good indication of the trip purposes for the "average" day, while the Saturday sample would probably indicate a greater proportion of personal trips.

According to information received from the Atlanta Regional Commission, over 385,000 passengers are on board aircraft landing or taking off from the Atlanta Airport each week. Of these 385,000 passengers, only 115,000 will actually deplane or enplane at the Airport. Only these persons should be surveyed because they are the only passengers who will actually be using ground transportation services in Atlanta. Conducting a sample on three days of the week will thus involve surveying 3/7 x 115,000 passengers or 49,300 passengers. A 20% random sample of flights in each of the three days will result in .2 x 49,300 or 9860 forms being distributed for the survey.

Each passenger boarding one of the "sample" aircraft in Atlanta should receive a survey form from the flight attendant. Passengers who are boarding aircraft at one of Atlanta's city pairs, should receive a survey form from the flight attendant only if they indicate that they will actually be going to an Atlanta location.

The cover sheet for the survey forms (passengers and employees) should be similar to the one for the 1968 survey and should provide the official title of the survey, the reason it is being conducted, and the name of the agencies on whose behalf it is being conducted.

A 10% sample of employees should be sufficient to acquire representative data. This survey will result in approximately 1000 forms being distributed at the employees' places of employment during their working hours.

Both survey forms should be collected immediately after the respondents have completed answering them. Collection folders should be provided to the personnel distributing the survey forms. A 20 minute allotment of time should be more than sufficient to give each passenger or employee an opportunity to complete the questionnaire.

Survey Questions

The survey form itself has been divided into three parts. The first section of the survey deals with general passenger or employee characteristics in order to identify the respondents to the survey as to their present mode of travel, Atlanta destination, and trip purpose. The questions included in this section of the survey were taken from the 1968 Atlanta Airport Transportation Studies Survey in order to be used for updating the data contained in that survey. (See Appendix B for a copy of the 1968 survey). A separate page for passengers arriving or departing from Atlanta has been prepared. (See pages 23 and 24 for the survey pages comprising the first section of the questionnaire.)

The first question in the survey identifies the respondent's present mode of travel, while the second and third questions are used to identify the respondent's Atlanta destination and the nature of that destination, respectively. The fourth question is used to determine

whether the respondent will drive his own vehicle to the airport or instead will depend on a relative or friend to pick him up or drop him off at the airport. If the respondent has indicated that he will be using a private auto, question five is used to determine where that vehicle will be parked. Question six was included to record the amount of baggage which the respondents are carrying with them since this is an important factor in determining the convenience of various ground access modes. Question seven is used to identify the respondent's trip purpose since this is another factor that has been found to be an important determinant of modal choice for airport access. Question eight has been designed to determine the respondent's familiarity with Atlanta since this factor is also expected to have an effect on the ground transportation mode used.

The second section of the survey deals with the passenger's or employee's attitude towards his present mode of travel to and from the Atlanta Airport. The respondent is here asked to identify the importance of each modal factor for the mode he will be travelling in or has just completed travelling in. The scaling differential technique used in this section has already been explained in Chapter II. Thus, the factors that are listed in this survey form are those which the author compiled from an analysis of modal-split factors included by other researchers who have developed attitudinal surveys. (see Appendix A). The following modal factors have been included to determine the respondent's attitude toward his present mode of ground access: comfort and attractiveness of the vehicle; quiet ride; trip cost; time spent riding, walking, or waiting during the trip; and pleasantness of the trip. (See page 25 for a listing of the questions included in this section of the survey.)

The third section of the survey form has been designed to ask the respondent whether or not he will use the rapid transit service to the airport as presently proposed by MARTA. (MARTA has proposed providing shuttle bus connections between the airport terminal and its Atlanta Airport Station.) The questions have been designed to find out why the respondents answered this first question as they did - i.e., what factors they considered the most important in making their decision as to whether or not they intend to use the MARTA system for access to or from the airport. The modal factors included for the respondent's evaluation are travel time, reliability, cost, vehicle condition, self-esteem, weather, and convenience. (See pages 26 and 27 for these survey questions.) This section of the survey should prove invaluable in attempting to determine first, the feasibility of extending the MARTA rail line, and second, what improvements should be attempted on the rapid rail system in order to attract patronage to it.

The final four questions on the questionnaire should provide personal data on the respondent's place of residence, sex, age, and income.

The material which is to be included in the employee survey is shown on page 28. The questions have been modified from those included in the passenger survey so as to ask the interviewees only those questions which apply to them as employees.

Computer Coding

The survey form has been prepared so that the data can be easily converted into computer input cards for convenient analysis. The numbers under each of the survey blanks indicate the column and the respective row which should be keypunched to input the response indicated by the interviewee. These computer code numbers will not be printed on the survey forms themselves so as not to clutter them up. The computer

Passengers on Aircraft Which Will Land at Atlanta

[About your plans upon arrival in the Atlanta area today]

1. On what types of vehicle do you plan to leave the Atlanta Airport today?

10-1☐ private car
10-2☐ rental car
10-3☐ taxi
10-4☐ airport bus or limousine
10-5☐ public bus
10-6☐ hotel/motel courtesy bus
10-7☐ other _____
please specify

2. What address will you be going to directly from the aiport?

_____
street # and name if known or name of building, firm, motel, or nearest street intersection

_____ _____ _____
city county state
(columns 11, 12 for area location in computer coding)

3. What is the nature of the above address?

13-1☐ a residence
13-2☐ a hotel, motel or similar place for overnight guests
13-3☐ your place of employment
13-4☐ another place of employment

4. If you will be leaving from the Atlanta Airport in a private or rental car, please check one of the following:

14-1☐ I will be the driver
14-2☐ I will be a passenger

5. If you are leaving the airport in a private car, please check one of the following:

15-1☐ The car is being driven to the airport to meet this flight
15-2☐ The car is parked in a parking lot at the airport
15-3☐ Other _____
please specify

6. Are you carrying any baggage with you?

16-0☐ No
16- 1-9☐ Yes, number of bags checked _____

7. What is your main purpose in taking this flight to Atlanta today? (check one)

17-1☐ business
17-2☐ personal or family affairs
17-3☐ vacation
17-4☐ travel to or from school
17-5☐ military leave or duty
17-6☐ convention, seminar, or lecture
17-7☐ other _____
please specify

8. About how many flights do you normally take to or from the Atlanta Airport in a year?

18-0☐ 1 or 2
18-1☐ 3 to 6
18-2☐ 6 to 9
18-3☐ 9 to 12
18-4☐ 12 to 15
18-5☐ over 15

Passengers Who Are on Aircraft Leaving Atlanta

[About your trip to the Atlanta Airport today]

1. In what type of vehicle did you arrive at the Atlanta Airport today?

10-1☐ private car
10-2☐ rental car
10-3☐ taxi
10-4☐ airport bus or limousine
10-5☐ public bus
10-6☐ hotel/motel courtesy bus
10-7☐ other _____
please specify

2. At what address did you board the vehicle in which you arrived at the airport?

_____
street # and name if known or name of building, firm, motel, or nearest street intersection

_____ _____ _____
city county state
(columns 11, 12 for area location in computer coding)

3. What is the nature of the above address?

13-1☐ a residence
13-2☐ a hotel, motel or similar place for overnight guests
13-3☐ your place of employment
13-4☐ another place of employment

4. If you arrived at the airport in a private or rental car, please check one of the following:

14-1☐ I was the driver
14-2☐ I was a passenger

5. If you arrived at the airport in a private car, please check one of the following:

15-1☐ The car was driven to the airport to meet this flight
15-2☐ The car was parked in a parking lot at the airport
15-3☐ Other _____
please specify

6. Did you check in any baggage at the airport to go on this flight?

16-0☐ No
16- 1-9☐ Yes, number of bags checked_____

7. What is your main purpose in taking this flight from Atlanta today? (check one)

17-1☐ business
17-2☐ personal or family affairs
17-3☐ vacation
17-4☐ travel to or from school
17-5☐ military leave or duty
17-6☐ convention, seminar, or lecture
17-7☐ other _____
please specify

8. About how many flights do you normally take to or from the Atlanta Airport in a year?

18-0☐ 1 or 2
18-1☐ 3 to 6
18-2☐ 6 to 9
18-3☐ 9 to 12
18-4☐ 12 to 15
18-5☐ over 15

[About the type of vehicle which you will be riding in today]

Please rate each factor in importance to you by placing a checkmark ☑ in the box along the scale which best describes the importance of each factor for the type of vehicle you will be in today.

9. How important is it for you to ride in a comfortable vehicle in making the trip (from, to) the airport?

Not at all	Very little	Somewhat	Very	Most
☐	☐	☐	☐	☐
19-0	19-1	19-2	19-3	19-4

10. How important is it for you to ride in an attractive vehicle in making the trip (from, to) the airport?

Not at all	Very little	Somewhat	Very	Most
☐	☐	☐	☐	☐
20-0	20-1	20-2	20-3	20-4

11. How important is it for you to ride in a vehicle which is quiet?

Not at all	Very little	Somewhat	Very	Most
☐	☐	☐	☐	☐
21-0	21-1	21-2	21-3	21-4

12. How important to you is the cost of the trip (to, from) the airport?

Not at all	Very little	Somewhat	Very	Most
☐	☐	☐	☐	☐
22-0	22-1	22-2	22-3	22-4

13. How important to you on this trip is the total time spent riding?

Not at all	Very little	Somewhat	Very	Most
☐	☐	☐	☐	☐
23-0	23-1	23-2	23-3	23-4

14. How important to you on this trip is the total time spent walking to and from the vehicle at the airport and at your final destination?

Not at all	Very little	Somewhat	Very	Most
☐	☐	☐	☐	☐
24-0	24-1	24-2	24-3	24-4

15. If applicable, how important to you is the time which you spent (or will spend) waiting for this vehicle to arrive and pick you up?

Not at all	Very little	Somewhat	Very	Most
☐	☐	☐	☐	☐
25-0	25-1	25-2	25-3	25-4

16. How important to you on this trip is its pleasantness?

Not at all	Very little	Somewhat	Very	Most
☐	☐	☐	☐	☐
26-0	26-1	26-2	26-3	26-4

17. How important to you on this trip is being able to ride with people you know and like?

Not at all	Very little	Somewhat	Very	Most
☐	☐	☐	☐	☐
27-0	27-1	27-2	27-3	27-4

The Metropolitan Atlanta Rapid Transit Authority is considering extending its rail rapid transit service to the airport. The layout of the entire rapid transit system is shown in the accompanying map.

The Authority would like to ask you the following questions in order to better plan for the type of service which it may provide at the Airport.

1. Would you ride on the rapid transit line (from, to) the airport (to, from) your final destination in Atlanta?

   ☐ yes 30-0 ☐ maybe 30-1 ☐ no 30-2

2. Please rate the following factors according to the importance which you gave to each of them in reaching the decision above. (Place a checkmark ✓ for each factor.)

	Importance		
	No	Little	Much
Travel Time			
arriving in the shortest time possible	31-0	31-1	31-2
travelling in light traffic	32-0	32-1	32-2
arriving at the intended time	33-0	33-1	33-2
travelling as fast as possible	34-0	34-1	34-2
Reliability			
arriving without accident	35-0	35-1	35-2
riding in safest possible vehicle	36-0	36-1	36-2
Cost			
total trip cost	37-0	37-1	37-2
Vehicle Condition			
riding in a clean vehicle	38-0	38-1	38-2
riding in a new, modern vehicle	39-0	39-1	39-2
Self-Esteem			
riding in an uncrowded vehicle	40-0	40-1	40-2
having a comfortable ride	41-0	41-1	41-2
avoid riding with strangers	42-0	42-1	42-2
riding with people you like	43-0	43-1	43-2
having enough baggage space	44-0	44-1	44-2
Weather			
having protection from the weather while waiting	45-0	45-1	45-2
riding in an air-conditioned vehicle	46-0	46-1	46-2

	Importance		
	No	Little	Much
Convenience			
being familiar with Atlanta	47-0	47-1	47-2
being familiar with the transit system	48-0	48-1	48-2
avoid walking more than 1 block	49-0	49-1	49-2
avoid waiting more than 5 minutes for the vehicle to arrive	50-0	50-1	50-2
avoid changing vehicles	51-0	51-1	51-2

[About yourself]

Where is your normal residence located?

city or town 55,56 county 57,58 state 59

Your sex:

☐ Male 60-0 ☐ Female 60-1

Your age bracket:

61-0 ☐ 12 or younger
61-1 ☐ 13 to 16
61-2 ☐ 17 to 20
61-3 ☐ 21 to 45
61-4 ☐ 46 to 64
61-5 ☐ 65 or over

Your income:

62-0 ☐ under $3,000
62-1 ☐ $3,000 to $5,000
62-2 ☐ $5,000 to $7,000
62-3 ☐ $7,000 to $10,000
62-4 ☐ $10,000 to $15,000
62-5 ☐ over $15,000

THANK YOU VERY MUCH FOR YOUR COOPERATION.

Employee Survey

1. In what type of vehicle do you plan to leave the Atlanta Airport today?

10-1 ☐	private car	10-3 ☐	taxi
10-2 ☐	rental car	10-4 ☐	public bus
10-5 ☐	other _____		

please specify (bicycle, walking, etc.)

2. In what type of vehicle did you arrive at work this morning?

11-1 ☐	private car	11-3 ☐	taxi
11-2 ☐	rental car	11-4 ☐	public bus
11-5 ☐	other _____		

please specify

3. If you either arrived at work in a private or rental car, or will be leaving from work in a private or rental car, please check one of the following:

12-1 ☐	I will be the driver	12-2 ☐	I will be a passenger

4. About the car in question three, please check one of the following:

13-1 ☐	The car is being driven to the airport.
13-2 ☐	The car is parked in a parking lot at the airport.
13-3 ☐	Other _____

please specify

Delete the following questions from the passenger survey for the employee survey:

No. 44	baggage space
47	being familiar with Atlanta

The remaining questions are the same in both surveys.

code numbers should only be included in the survey forms distributed to the keypunch operators who will be transferring the survey results into computer data cards. For example, if in question one, the respondent has indicated that he will be using a taxi, the number three should be keypunched under column ten for the data card corresponding to that respondent. (9860 cards will have to be prepared for the passengers' and 1000 for the employees' survey.)

The first ten columns (0 - 9) have been provided for the flight number and passenger code (PASS). On the employee survey, the name of the employee's firm and the employee code (EMPL) should be listed in these first ten columns.

Final Survey Questions

The survey questions which have been detailed in the previous pages were the preliminary ones prepared by the author. These questions were sent out to agencies in the Atlanta Area who will either be directly involved in the decision to extend the MARTA line or who have had previous experience in conducting surveys of this type, in order to receive the benefit of their analysis of the survey form. The agencies or firms which were sent copies of the questionnaire included: MARTA, the Atlanta Airport Planning Director's office, the Atlanta Regional Commission, the City of Atlanta Planning Department, and the Atlanta office of Parsons, Brinkerhoff, Tudor, and Bechtel. The comments received from these agencies will now be used to improve the preliminary survey questions.

The most frequent criticism received from these agencies was in regard to the length of the questionnaire. All agencies consulted indicated that the most effective survey in terms of interviewee response would be one that could be contained in one page. The overall consensus

was that the survey form should be drastically shortened in order to increase the probability of a good sample response.

The second most frequent criticism concerned the belief of those persons consulted that the survey questions were repetitive, i.e., that the questions on the present mode choice and the rapid transit mode factors did not both have to be included in the questionnaire. This deficiency can be resolved together with the first one concerning the length of the questionnaire by deleting the section of questions dealing with the present modal choice factors. In the final survey form the interviewees will only be asked to rate the importance of the various rapid transit mode factors related to their decision to use the MARTA system.

The remaining criticism dealt with specific questions. For example, it was felt by the persons consulted that the question on income (no. 62) should be revised in order to better reflect the high income status of most air passengers. The income strata will now be changed so as to provide a higher emphasis on the income strata above $10,000. The age brackets considered in question no. 61 will also be modified. Only four brackets will be listed instead of the present six.

One of the most helpful and valid criticisms came from Mr. Max Walker, the Planning Coordinator at the Atlanta Airport. Mr. Walker suggested that a question should be included in the survey which would indicate the potential patronage for a specialized type of airport rapid transit service. This type of service, presently available in several European cities and in New York City consists of providing ticketing and baggage handling facilities in the city's CBD with bus or transit connections to the airport. This system offers a convenient and comfortable modal alternative to the automobile by letting the air passenger check his baggage in at a downtown location and then be transported

to the airport in a bus or rapid rail vehicle used only by air passengers. According to Mr. Walker, the system operators and the airlines have instituted an agreement whereby planes do not depart until the passengers scheduled on it and who are on the airport bus have arrived. After reviewing various airport transit feasibility studies, Mr. Walker has come to the conclusion that only this type of "first-class" service will get the affluent air passenger onto a public transit vehicle. Accordingly, a question will be added to the questionnaire regarding this type of airport transit service.

Another question that will be added, this one to the employee survey, will attempt to ascertain the relationship between where the employee lives and his mode of access to the airport. In this manner, it should be possible to determine, what improvements if any, can be made to the transit service in order to attract more employee patronage. The question on potential patronage will also include bus as well as rapid rail service to the airport because employees are much more liable to use buses than air passengers would, being more familiar with the MARTA system, and probably less status-conscious.

Questions that will be deleted from the final survey form include the following: no. 5 on the location of the private car, and nos. 9 and 17 on the present modal factors' importance. Modal factors deleted include no. 42 - avoid riding with strangers, and no. 43 - riding with people you like.

The question on potential transit patronage will be reworded to read as follows: Would you ride the rapid transit line (from, to) the airport (to, from) the address you indicated in question no. 2?

The final survey questions are shown in the following pages. The final survey forms are included in Appendix C.

Passengers on Aircraft Which Will Land at Atlanta

[About your plans upon arrival in the Atlanta area today]

1. In what type of vehicle do you plan to leave the Atlanta Airport today?

10-0☐ private car
10-1☐ rental car
10-2☐ taxi
10-3☐ airport bus or limousine
10-4☐ public bus
10-5☐ hotel/motel courtesy bus
10-6☐ other_____
please specify

2. What address will you be going to directly from the airport?

_____
street # and name if known or name of building, firm, motel, or nearest street intersection

_____ _____ _____
city county state
(columns 11, 12, 13 for area location in computer coding)

3. What is the nature of the above address?

14-0☐ a residence
14-1☐ a hotel, motel or similar place for overnight guests
14-2☐ your place of employment
14-3☐ another place of employment

4. If you will be leaving from the Atlanta Airport in a private or rental car, please check one of the following:

15-0☐ I will be the driver 15-1☐ I will be a passenger

5. Are you carrying any baggage with you?

16-0☐ No 16-1-9☐ Yes, number of bags checked _____

6. What is your main purpose in taking this flight to Atlanta today? (check one)

17-0☐ business
17-1☐ personal or family affairs
17-2☐ vacation
17-3☐ travel to or from school
17-4☐ military leave or duty
17-5☐ convention, seminar, or lecture
17-6☐ other_____
please specify

7. About how many flights do you normally take to or from the Atlanta Airport in a year?

18-0☐ 1 or 2
18-1☐ 3 to 6
18-2☐ 6 to 9
18-3☐ 9 to 12
18-4☐ 12 to 15
18-5☐ over 15

Passengers Who Are on Aircraft Leaving Atlanta

[About your trip to the Atlanta Airport today]

1. In what type of vehicle did you arrive at the Atlanta Airport today?

10-0☐ private car
10-1☐ rental car
10-2☐ taxi
10-3☐ airport bus or limousine
10-4☐ public bus
10-5☐ hotel/motel courtesy bus
10-6☐ other_____
please specify

2. At what address did you board the vehicle in which you arrived at the airport?

_____
street # and name if known or name of building, firm, motel, or nearest intersection

_____ _____ _____
city county state
(columns 11, 12, 13 for area location in computer coding)

3. What is the nature of the above address:

14-0☐ a residence
14-1☐ a hotel, motel or similar place for overnight guests
14-2☐ your place of employment
14-3☐ another place of employment

4. If you arrived at the airport in a private or rental car, please check one of the following:

15-0☐ I was the driver
15-1☐ I was a passenger

5. Did you check in any baggage at the airport to go on this flight?

16-0☐ No
16-1-9☐ Yes, number of bags checked____

6. What is your main purpose in taking this flight from Atlanta today? (Check one)

17-0☐ business
17-1☐ personal or family affairs
17-2☐ vacation
17-3☐ travel to or from school
17-4☐ military leave or duty
17-5☐ convention, seminar, or lecture
17-6☐ other_____
please specify

7. About how many flights do you normally take to or from the Atlanta airport in a year?

18-0☐ 1 or 2
18-1☐ 3 to 6
18-2☐ 6 to 9
18-3☐ 9 to 12
18-4☐ 12 to 15
18-5☐ over 15

The Metropolitan Atlanta Rapid Transit Authority is considering extending its rail rapid transit service to the airport. The layout of the entire rapid transit system is shown in the accompanying map.

The Authority would like to ask you the following questions in order to better plan for the type of service which it may provide at the Airport.

1. Would you ride on the rapid transit line (from, to) the airport (to, from) the address you indicated in question no. 2?

   ☐ yes (20-0) ☐ maybe (20-1) ☐ no (20-2)

2. Please rate the following factors according to the importance which you gave to each of them in reaching the decision above. (Place a checkmark ✓ for each factor.)

	Importance		
	No	Little	Much
Travel Time			
arriving in the shortest time possible	21-0	21-1	21-2
travelling in light traffic	22-0	22-1	22-2
arriving at the intended time	23-0	23-1	23-2
travelling as fast as possible	24-0	24-1	24-2
Reliability			
arriving without accident	25-0	25-1	25-2
riding in safest possible vehicle	26-0	26-1	26-2
Cost			
total trip cost	27-0	27-1	27-2
Vehicle Condition			
riding in a clean vehicle	28-0	28-1	28-2
riding in a new, modern vehicle	29-0	29-1	29-2
Self-Esteem			
riding in an uncrowded vehicle	30-0	30-1	30-2
having a comfortable ride	31-0	31-1	31-2
having enough baggage space	32-0	32-1	32-2
Weather			
having protection from the weather while waiting	33-0	33-1	33-2
riding in an air-conditioned vehicle	34-0	34-1	34-2

	Importance		
	No	Little	Much
Convenience			
being familiar with Atlanta	35-0	35-1	35-2
being familiar with the transit system	36-0	36-1	36-2
avoid walking more than 1 block	37-0	37-1	37-2
avoid waiting more than 5 minutes for the vehicle to arrive	38-0	38-1	38-2
avoid changing vehicles	39-0	39-1	39-2

3. Would you ride on a public transit vehicle in Atlanta if you were able to check your baggage in either a downtown or suburban airline ticket office and then be guaranteed that your flight would not depart until the transit vehicle you were riding in had arrived at the airport?

☐ 40-0 yes ☐ 40-1 maybe ☐ 40-2 no

4. Would you use this type of specialized transit service in going from the airport to your Atlanta destination?

☐ 41-0 yes ☐ 41-1 maybe ☐ 41-2 no

[About yourself]

Where is your normal residence located?

_____ city or town _____ county _____ state

(Columns 50-59 for city name in computer coding)

Your sex:

☐ 60-0 Male ☐ 60-1 Female

Your age bracket:

☐ 61-0 16 or younger ☐ 61-1 16 to 30 ☐ 61-2 31 to 64 ☐ 61-3 65 or over

Your income:

☐ 62-0 under $5,000 ☐ 62-1 $5,000 to $10,000 ☐ 62-2 $10,000 to $15,000 ☐ 62-3 $15,000 to $20,000 ☐ 62-4 $20,000 to $25,000 ☐ 62-5 $over $25,000

THANK YOU VERY MUCH FOR YOUR COOPERATION

Employee Survey

1. In what type of vehicle do you plan to leave the Atlanta Airport today?

10-0 ☐ private car 10-2 ☐ taxi
10-1 ☐ rental car 10-3 ☐ public bus
10-4 ☐ other _____
please specify (bicycle, walking, etc.)

2. In what type of vehicle did you arrive at work this morning?

11-0 ☐ private car 11-2 ☐ taxi
11-1 ☐ rental car 11-3 ☐ public bus
11-4 ☐ other _____
please specify

3. If you either arrived at work in a private car or rental car, or will be leaving from work in a private or rental car, please check one of the following:

12-0 ☐ I will be the driver 12-1 ☐ I will be a passenger

4. About the car in question three, please check one of the following:

13-0 ☐ The car was driven to the airport to drop me off for work.
13-1 ☐ The car is parked in a parking lot at the airport.
13-2 ☐ Other _____
please specify

5. Please state the name of the street intersection nearest your home.

_____ _____ _____
STREET Intersection City County

(Columns 14, 15, 16 for area location in computer coding)

6. Why did you choose that area in which to live?

17-0 ☐ Nice homes 17-2 ☐ Convenient to the airport
17-1 ☐ Good Schools 17-3 ☐ Quiet area
17-4 ☐ Other _____
please specify

Delete the following questions from the passenger survey for the employee survey:

No. 32 baggage space
35 being familiar with Atlanta
3-4 specialized transit service

The remaining questions are the same in both surveys.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Attitudinal data can play an important role in transportation planning by isolating modal characteristics on which to base policy decisions.

The survey form developed in this report has been designed so as to identify the modal characteristics considered important by respondents to the survey in deciding whether or not they planned to ride the proposed MARTA rapid transit line to or from the Atlanta Airport. This information should prove very valuable to MARTA and the other agencies involved in this decision because it will provide them with the potential user's input into the planning process. Within financial and legal constraints, the transit planner should then be able to tailor the service provided to the service demanded as identified by the importance given to each modal factor in the survey. For example, the majority of persons interviewed in the survey may have considered the cost of the trip as an unimportant factor, but yet considered convenience to be extremely important. Knowing this, MARTA might decide to investigate more closely the feasibility of providing the type of airport-transit service now provided in New York and in certain European cities. (See question no. 3 of the survey, page 35.)

In order to derive the greatest benefit from conducting this attitudinal survey the basic steps in the process will be reviewed in the following paragraphs.

1. The actual survey forms (for employees and passengers) to be distributed can be found in Appendix C of this report. Each survey form should be accompanied by a map of the MARTA system.
2. The survey form should be distributed on board the aircraft for the passenger survey and at the place of employment for the employee survey. The forms should be collected as soon as the respondents have completed answering the questions. Twenty minutes should be more than sufficient time to do so.
3. A 20% daily random sample of flights should be conducted on Monday, Wednesday, and Saturday in order to ensure that all types of trip purposes are equally represented. This will result in some 9860 survey forms being distributed to air passengers. A 10% sample of employees will result in 1000 survey forms being distributed at their place of employment.
4. The survey form has been designed so as to be computer coded. However, the survey forms which will be actually distributed will not contain the computer code numbers so as not to clutter up the page. (See Appendix C). When coding question no. 2, separate computer code numbers should be listed for cities in Fulton, DeKalb, Cobb, Clayton, and Gwinnett Counties. Elsewhere, a number should be provided for the county only.

Appendix A

General Motors Research

Pilot Survey

1

APPENDIX A
THE PILOT SURVEY

This survey is being conducted to obtain information needed to improve transportation systems in your metropolitan area.

It is primarily designed to study the various means of transportation used by people in getting to and from their work. If by chance you are not regularly employed, or your job is the type that does not require you to usually travel to the SAME PLACE, we would prefer that you pass this form on to someone else to answer.

We would appreciate your returning this questionnaire just as soon as it is convenient to do so. Please use the postage paid envelope provided.

Thank You Very Much

Consider the way in which you USUALLY make your ONE-WAY trip FROM HOME TO WORK.

How long does this trip take when the weather is good? ..... minutes

Check the ONE box below which describes the type of transportation which you MOST OFTEN use to make this one-way trip FROM HOME TO WORK. (Do not consider walking UNLESS you walk all the way to work.)

- ☐ **Automobile (driver)**
- ☐ **Automobile (passenger)**
- ☐ **Bus or Streetcar**
- ☐ **Elevated or Subway**
- ☐ **Commuter Railroad**
- ☐ **Automobile and Bus or Streetcar**
- ☐ **Automobile and Elevated or Subway**
- ☐ **Automobile and Commuter Railroad**
- ☐ **Bus or Streetcar and Elevated or Subway**
- ☐ **Commuter Railroad and Bus**
- ☐ **Walking ALL the way**
- ☐ **Other (please specify)**.....

If you indicated that you use any of the types of public transportation listed above which have SCHEDULED DEPARTURES, what is the normal time between departures for each type you use at the time of day you usually travel TO WORK. Also, what are the ONE-WAY fares?

	Leaves Every	ONE-WAY fares
Bus or Streetcar	.....Min.	$.....
Elevated or Subway	.....Min.	$.....
Commuter Railroad	.....Min.	$.....

If you checked the "Automobile (driver)" box above, how much does it cost you per day to park? $.....

In total, how much time do you spend walking to and from vehicles during your ONE-WAY trip to work?.....total minutes

In total, how much time do you spend waiting for vehicle(s) during your ONE-WAY trip to work?.....total minutes

Approximately how many miles do you travel in making your usual ONE-WAY trip to work?

- ☐ **Under 2 Miles**
- ☐ **2-5 Miles**
- ☐ **5-10 Miles**
- ☐ **10-15 Miles**
- ☐ **15-20 Miles**
- ☐ **Over 20 Miles**

2

APPENDIX A
THE PILOT SURVEY

Below is a list of phrases some people use to describe their trip to work. For each phrase, rate your overall HOME TO WORK trip by placing a check mark ☑ in the box along the scale at that point which best describes your SATISFACTION with that aspect of the overall trip. If a phrase does not apply, check the box marked "Not Applicable" (N.A.)

COMFORT IN VEHICLE *(See Footnote)* — N.A. ☐
EXCELLENT ☐☐☐☐☐☐ POOR

DEPENDABILITY OF ON-TIME ARRIVAL — N.A. ☐
EXCELLENT ☐☐☐☐☐☐ POOR

PROTECTION FROM WEATHER WHILE WAITING — N.A. ☐
EXCELLENT ☐☐☐☐☐☐ POOR

FREQUENCY OF VEHICLE DEPARTURE TIMES — N.A. ☐
EXCELLENT ☐☐☐☐☐☐ POOR

PLEASANTNESS OF TRIP — N.A. ☐
EXCELLENT ☐☐☐☐☐☐ POOR

ATTRACTIVENESS OF VEHICLE *(See Footnote)* — N.A. ☐
EXCELLENT ☐☐☐☐☐☐ POOR

NOISE IN VEHICLE *(See Footnote)* — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

CHANCE OF ACCIDENTS — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

EXPOSURE TO UNDESIRABLE BEHAVIOR OF OTHERS — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

TRAFFIC — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

BODILY CROWDING — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

OUT OF POCKET COST OF TRIP — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

TOTAL TIME SPENT RIDING — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

TOTAL TIME SPENT WALKING — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

TOTAL TIME SPENT WAITING — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

(Consider vehicle used for LONGEST TIME during trip)

3

APPENDIX A
THE PILOT SURVEY

Do you travel to work in a different way when the weather is bad?

☐ **Yes** ☐ **No**

On the first page, you described your USUAL or FIRST-CHOICE way of getting FROM HOME TO WORK. Now consider your ONE NEXT BEST or SECOND-CHOICE way of getting FROM HOME TO WORK which is available to you.

How long does (would) this NEXT BEST way of getting to work take?.....minutes

Check the ONE box below which describes the type of transportation which you use, or could use, to make this second-choice one-way trip FROM HOME TO WORK.

☐ **Automobile (driver)**
☐ **Automobile (passenger)**
☐ **Bus or Streetcar**
☐ **Elevated or Subway**
☐ **Commuter Railroad**
☐ **Automobile and Bus or Streetcar**
☐ **Automobile and Elevated or Subway**
☐ **Automobile and Commuter Railroad**
☐ **Bus or Streetcar and Elevated or Subway**
☐ **Commuter Railroad and Bus**
☐ **Walking ALL the Way**
☐ **Other (please specify).....**

☐ **No second-choice available**

If you indicated that you use, or could use as a second-choice, any of the types of public transportation listed above which have SCHEDULED DEPARTURES, what is the normal time between departures for each type you use at the time of day you usually travel TO WORK. Also, what are the ONE-WAY fares?

	Leaves Every	ONE-WAY fares
Bus or Streetcar	.....Min.	$.....
Elevated or Subway	.....Min.	$.....
Commuter Railroad	.....Min.	$.....

If you checked the "Automobile (driver)" box above, how much does it cost you per day to park? $.....

In total, how much time do you spend walking to and from vehicles during your *second-choice* ONE-WAY trip to work?.....total minutes

In total, how much time do you spend waiting for vehicle(s) during your *second-choice* ONE-WAY trip to work?.....total minutes

Approximately how many miles do you travel in making your *second-choice* ONE-WAY trip to work?

☐ **0-2 Miles**
☐ **2-5 Miles**
☐ **5-10 Miles**
☐ **10-15 Miles**
☐ **15-20 Miles**
☐ **Over 20 Miles**

4

APPENDIX A
THE PILOT SURVEY

Below is a list of phrases some people use to describe their trip to work. For each phrase, rate your SECOND CHOICE overall HOME TO WORK trip by placing a check mark ☑ in the box along the scale at that point which best describes your SATISFACTION with that aspect of the SECOND-CHOICE overall trip. If a phrase does not apply, check the box marked "Not Applicable" (N.A.).

COMFORT IN VEHICLE *(See Footnote)* — N.A. ☐
EXCELLENT ☐☐☐☐☐☐☐ POOR

DEPENDABILITY OF ON-TIME ARRIVAL — N.A. ☐
EXCELLENT ☐☐☐☐☐☐☐ POOR

PROTECTION FROM WEATHER WHILE WAITING — N.A. ☐
EXCELLENT ☐☐☐☐☐☐☐ POOR

FREQUENCY OF VEHICLE DEPARTURE TIMES — N.A. ☐
EXCELLENT ☐☐☐☐☐☐☐ POOR

PLEASANTNESS OF TRIP — N.A. ☐
EXCELLENT ☐☐☐☐☐☐☐ POOR

ATTRACTIVENESS OF VEHICLE *(See Footnote)* — N.A. ☐
EXCELLENT ☐☐☐☐☐☐☐ POOR

NOISE IN VEHICLE *(See Footnote)* — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

CHANCE OF ACCIDENTS — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

EXPOSURE TO UNDESIRABLE BEHAVIOR OF OTHERS — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

TRAFFIC — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

BODILY CROWDING — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

OUT OF POCKET COST OF TRIP — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

TOTAL TIME SPENT RIDING — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

TOTAL TIME SPENT WALKING — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

TOTAL TIME SPENT WAITING — N.A. ☐
COMPLETELY ACCEPTABLE ☐☐☐☐☐☐☐ HIGHLY UNSATISFACTORY

(Consider vehicle used for LONGEST TIME during trip)

5

APPENDIX A

THE PILOT SURVEY

For Statistical Purposes

Please answer the following questions concerning you and your family, so that we will be able to determine whether men have different preferences than women, whether married people have different preferences than single people, and so on.

Your Age..... Are you ☐ Male ☐ Female

Marital Status:

☐ Married If married, how long?.....(years) Number of Children.....

☐ Single ☐ Divorced, Separated ☐ Widowed

Housing:

Do you own or rent? ☐ Own ☐ Rent

Type of Living Structure (check)

☐ Single Family House ☐ Apartment Dwelling

☐ 2-4 Family House ☐ Other (please specify).....

Education:

Please circle last year you completed in school:

Grade School— 1 2 3 4 5 6 7 8 High School— 1 2 3 4 College— 1 2 3 4 5+

Trade School: Years Completed..... Military Service School: Months Completed.....

Employment:

Yourself? ☐ Full ☐ Part Time

Spouse? ☐ Full ☐ Part Time ☐ Not Employed

Occupation:

What product or service does your company make or sell?.....

What is your particular job title?.....

Number of cars or trucks in your household?.....

Do you have a driver's license? ☐ Yes ☐ No

Do you USUALLY have a car/truck available for your work trip? ☐ Yes ☐ No

Please indicate in which of the ranges below your total yearly family income falls?

☐ Under $3,000 ☐ $5,000 to $7,000 ☐ $10,000 to $15,000

☐ $3,000 to $5,000 ☐ $7,000 to $10,000 ☐ Over $15,000

THANK YOU VERY MUCH FOR YOUR COOPERATION

Appendix B

1968 Atlanta Airport

Transportation Survey

FIGURE 1

ATLANTA AIRPORT TRANSPORTATION SURVEY

A STUDY OF TRANSPORTATION TO AND FROM THE ATLANTA AIRPORT

The information you provide in this survey will be a valuable aid in the development of plans designed to provide you and your friends with improved transportation system services to, from, and at the Atlanta Airport.*

■

Your Name or Other Personal Identification Is Not Requested

■

The Requested Information Will Only Take A Few Minutes To Complete

■

Thank You For Your Cooperation And Valuable Assistance

THIS SURVEY IS BEING CONDUCTED FOR:

THE CITY OF ATLANTA, GEORGIA

By

The Airlines Serving Atlanta
and
Alan M. Voorhees & Associates, Inc

Transportation & Urban Planning Consultants

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* Flight crew personnel will request your completed survey form before passengers deplane at the next stop.

PASSENGERS WHO ARE ON AIRCRAFT LEAVING ATLANTA

NOTE:

THE INFORMATION REQUESTED IN THIS BOX SHOULD BE COMPLETED BY ONLY THOSE PASSENGERS WHO:

- TRANSFERRED TO THIS FLIGHT AT THE ATLANTA AIRPORT **FROM A CONNECTING FLIGHT**, OR
- WERE **ALREADY ON BOARD THIS FLIGHT** WHEN IT LANDED IN ATLANTA TODAY.

Please check one of the following:

1. I was on this flight when it arrived in Atlanta today. 0☐
2. I was transferred to this flight at Atlanta from a connecting flight of:
   1☐ this same airline _____ flight number
   2☐ another airline _____ name of airline & flight number
3. Did you have a snack or meal at the Atlanta Airport today before boarding this flight?
   ☐ yes 0☐ no
   IF YES, please check the type of eating facility you used:
   1☐ snack bar 2☐ coffee shop 3☐ restaurant

OTHER INFORMATION IN THIS FORM SHOULD NOT BE COMPLETED BY THESE PARTICULAR PASSENGERS.

I. ABOUT YOUR TRIP TO THE ATLANTA AIRPORT TODAY

In what type of vehicle did you arrive at the Atlanta Airport today?

1☐ private car
2☐ rented car
3☐ taxi
4☐ airport bus or limousine
5☐ public bus
6☐ hotel/motel courtesy car
7☐ other _____ please specify

2. At what address did you board the vehicle in which you arrived at the airport?

_____ street # & name if known or name of building, firm, motel or nearest street intersection
_____ city
_____ county
_____ state

3. What is the nature of the above departure address?

1☐ A Residence
2☐ A Hotel or similar place for overnight guests
3☐ Your place of employment
4☐ Another place of employment
5☐ Other _____ please specify (e.g., University, Hospital, Military Reservation, etc.)

4. Which of the following locations best defines the above departure address?

1☐ Atlanta Central Business District
2☐ Lockheed-Marietta Plant Area
3☐ A motel near the Airport
4☐ Chamblee-Doraville Area
5☐ Decatur-Emory-Stone Mountain Area
6☐ Jonesboro-Fayetteville-Griffin Area
7☐ Other _____ please specify

5. If you arrived at the airport in a private **or** rented car, please check one of the following:

1☐ I was the driver 2☐ I was the passenger

6. If you arrived at the airport in a **private car**, please check one of the following:

1☐ car driven away from airport by another person
2☐ car is parked in public parking lot
3☐ car is parked in valet parking lot
4☐ Other _____ please specify

7. If you arrived in a **private car** which was parked at the airport, about how long do you expect it will be parked there?

1☐ less than 1 hour
2☐ 1 to 2 hours
3☐ 3 to 4 hours
4☐ 5 to 9 hours
5☐ 10 to 24 hours
6☐ more than 24 hours, please specify number of days parked _____ number of days

8. If you arrived at the airport in a **private car, rented car, or taxi,** how many people accompanied you in the vehicle?

_____ number of people

How many of these people **are also** taking a flight from the Atlanta Airport today? _____ number of people

9. Did you check in any baggage at the airport to go on this flight?

0☐ no ☐ yes, number of bags checked _____

10. Did you have a snack or meal at the Atlanta Airport before boarding?

☐ yes 0☐ no

IF YES, please check the type of eating facility used:

1☐ snack bar 2☐ coffee shop 3☐ restaurant

11. About what time did you arrive at the Atlanta Airport for this flight?

_____ time ☐ a.m. ☐ p.m.

II. ABOUT YOUR FLIGHT TODAY

12. My main purpose in taking this trip is (check one):

1☐ business
2☐ personal or family affairs
3☐ vacation
4☐ travel to or from school
5☐ military leave or travel
6☐ convention, seminar or lecture
7☐ other _____ please specify

13. At what city are you leaving this flight today?

_____ city
_____ state

III. ABOUT YOURSELF

14. Where is your normal residence located?

_____ city or town
_____ county
_____ state

15. Your sex:

1☐ male 2☐ female

16. Your age bracket:

1☐ 12 or younger
2☐ 13 to 16
3☐ 17 to 20
4☐ 21 to 45
5☐ 46 to 64
6☐ 65 or over

17. About how many flights do you normally take **from** the Atlanta Airport in a year?

1☐ 1 or 2
2☐ 3 or 4
3☐ 5 or 6
4☐ 7 or 8
5☐ 9 or 10
6☐ 11 or 12
7☐ 13 or 14
8☐ 15 to 20
9☐ 21 or more

PASSENGERS ON AIRCRAFT WHICH WILL LAND AT ATLANTA

IOTE:
THE INFORMATION REQUESTED IN THIS BOX SHOULD BE COMPLETED BY ONLY THOSE PASSENGERS WHO:

- **ARE TRANSFERRING TO A CONNECTING** FLIGHT AT THE ATLANTA AIRPORT, OR
- **WILL REMAIN ON THIS FLIGHT** WHEN IT LEAVES ATLANTA.

Please check one of the following:

1. I will leave Atlanta on this flight today. 0☐
2. My connecting flight in Atlanta is a flight of:
   1☐ this same airline _____ flight number
   2☐ another airline _____ name of airline & flight number
3. Do you plan on having a snack or meal at the Atlanta Airport today before taking your connecting flight?
   ☐ yes 0☐ no
   IF YES, please check the type of eating facility you plan on using
   1☐ snack bar 2☐ coffee shop 3☐ restaurant

OTHER INFORMATION IN THIS FORM SHOULD NOT BE COMPLETED BY THESE PARTICULAR PASSENGERS.

I. ABOUT YOUR PLANS UPON ARRIVAL IN THE ATLANTA AREA TODAY

1. In what type of vehicle do you plan to leave the Atlanta Airport today?
   1☐ private car
   2☐ rental car
   3☐ taxi
   4☐ airport bus or limousine
   5☐ public bus
   6☐ hotel/motel courtesy car
   7☐ other _____ please specify

2. What address will you be going to **directly** from the airport?
   _____ Street # & Name if known or Name of Building, Firm, Motel, or Nearest Street Intersection
   _____ City
   _____ County
   _____ State

3. What is the nature of the above address?
   1☐ A Residence
   2☐ A Hotel or similar place for overnight guests
   3☐ Your place of employment
   4☐ Another place of employment
   5☐ Other _____ Please Specify (e.g., Univ., Hosp., Mil. Res., etc.)

4. Which of the following best defines the location you will be going to **directly** from the airport?
   1☐ Atlanta Central Business District
   2☐ Lockheed-Marietta Plant Area
   3☐ A motel near the Airport
   4☐ Chamblee-Doraville Area
   5☐ Decatur-Emory-Stone Mountain Area
   6☐ Jonesboro-Fayetteville-Griffin Area
   7☐ Other _____ please specify

5. If you will be leaving from the Atlanta Airport in a private or rental car, please check one of the following:
   1☐ I will be the driver 2☐ I will be a passenger

6. If you are leaving the airport in a **private car,** please check the present location of the car:
   1☐ being driven to airport to meet this flight
   2☐ parked in a public parking lot
   3☐ parked in valet parking lot
   4☐ Other _____ please specify

7. If you left a car parked at the Atlanta Airport for your use in leaving the airport, about how long will it have been parked upon your arrival there today?
   2☐ 1 to 2 hours
   3☐ 3 to 4 hours
   4☐ 5 to 9 hours
   5☐ 10 to 24 hours
   6☐ more than 24 hours, please specify number of days parked _____ number of days

8. If you plan on leaving Atlanta Airport in a **private car, rental car, or taxi,** how many other people will accompany you? _____ number of people
   How many of these people **are** arriving on a flight to Atlanta today? _____ number

9. Did you check in any baggage to go on this flight today?
   0☐ no ☐ yes, number of bags checked _____

10. Do you plan on having a snack, or meal at the Atlanta Airport today before you leave for your Atlanta area destination?
    ☐ yes 0☐ no
    IF YES, please check the type of eating facility you plan on using:
    1☐ snack bar 2☐ coffee shop 3☐ restaurant

II. ABOUT YOUR FLIGHT TO ATLANTA TODAY

11. My main purpose in taking this flight to Atlanta today is:
    (Check One)
    1☐ business
    2☐ personal or family affairs
    3☐ vacation
    4☐ travel to or from school
    5☐ military leave or duty
    6☐ convention, seminar or lecture
    7☐ Other _____ please specify

12. At what city did you board this flight today?
    _____ City
    _____ State

III. ABOUT YOURSELF

13. Where is your normal residence located?
    _____ City or Town
    _____ County
    _____ State

14. Your sex:
    1☐ male 2☐ female

15. Your age bracket:
    1☐ 12 or younger
    2☐ 13 to 16
    3☐ 17 to 20
    4☐ 21 to 45
    5☐ 46 to 64
    6☐ 65 or over

16. About how many flights do you normally take **to** the Atlanta Airport in a year?
    1☐ 1 or 2
    2☐ 3 or 4
    3☐ 5 or 6
    4☐ 7 or 8
    5☐ 9 or 10
    6☐ 11 or 12
    7☐ 13 or 14
    8☐ 15 to 20
    9☐ 21 or more

Appendix C

1973 Airport - MARTA

Attitudinal Survey Forms

Passengers Who Are on Aircraft Leaving Atlanta

[About your trip to the Atlanta Airport today]

1. In what type of vehicle did you arrive at the Atlanta Airport today?

☐ private car
☐ rental car
☐ taxi
☐ other_____ (please specify)
☐ airport bus or limousine
☐ public bus
☐ hotel/motel courtesy bus

2. At what address did you board the vehicle in which you arrived at the airport?

_____
street # and name if known or name of building, firm, motel, or nearest street intersection

_____ city _____ county _____ state

3. What is the nature of the above address?

☐ a residence
☐ a hotel, motel or similar place for overnight guests
☐ your place of employment
☐ another place of employment

4. If you arrived at the airport in a private or rental car, please check one of the following:

☐ I was the driver ☐ I was a passenger

5. Did you check in any baggage at the airport to go on this flight?

☐ No ☐ Yes, number of bags checked_____

6. What is your main purpose in taking this flight from Atlanta today? (check one)

☐ business
☐ personal or family affairs
☐ vacation
☐ other_____ (please specify)
☐ travel to or from school
☐ military leave or duty
☐ convention, seminar, or lecture

7. About how many flights do you normally take to or from the Atlanta Airport in a year?

☐ 1 or 2
☐ 3 to 6
☐ 6 to 9
☐ 9 to 12
☐ 12 to 15
☐ over 15

The Metropolitan Atlanta Rapid Transit Authority is considering extending its rail service to the airport. The layout of the entire rapid transit system is shown in the accompanying map.

The Authority would like to ask you the following questions in order to better plan for the type of service which it may provide at the Airport.

1. Would you ride on the rapid transit line (from, to) the airport (to, from) the address you indicated in question no. 2?

☐ yes ☐ maybe ☐ no

2. Please rate the following factors according to the importance which you gave to each of them in reaching the decision above. (Place a checkmark ✓ for each factor.)

	Importance		
	No	Little	Much
Travel Time			
arriving in the shortest time possible	___	___	___
travelling in light traffic	___	___	___
arriving at the intended time	___	___	___
travelling as fast as possible	___	___	___

Passengers on Aircraft Which Will Land at Atlanta

[About your plans upon arrival in the Atlanta area today]

1. In what type of vehicle do you plan to leave the Atlanta Airport today?

☐ private car
☐ rental car
☐ taxi
☐ other_____
please specify
☐ airport bus or limousine
☐ public bus
☐ hotel/motel courtesy bus

2. What address will you be going to directly from the airport?

_____
street # and name if known or name of building, firm, motel, or nearest street intersection

_____ _____ _____
city county state

3. What is the nature of the above address?

☑ a residence
☐ a hotel, motel or similar place for overnight guests
☐ your place of employment
☐ another place of employment

4. If you will be leaving from the Atlanta Airport in a private or rental car, please check one of the following:

☐ I will be the driver ☐ I will be a passenger

5. Are you carrying any baggage with you?

☐ No ☐ Yes, number of bags checked_____

6. What is your main purpose in taking this flight to Atlanta today? (check one)

☐ business
☐ personal or family affairs
☐ vacation
☐ travel to or from school
☐ military leave or duty
☐ convention, seminar or lecture

☐ other_____
please specify

7. About how many flights do you normally take to or from the Atlanta Airport in a year?

☐ 1 to 2
☐ 3 to 6
☐ 6 to 9
☐ 9 to 12
☐ 12 to 15
☐ over 15

The Metropolitan Atlanta Rapid Transit Authority is considering extending its rail rapid transit service to the airport. The layout of the entire rapid transit system is shown in the accompanying map.

The Authority would like to ask you the following questions in order to better plan for the type of service which it may provide at the Airport.

1. Would you ride on the rapid transit line (from, to) the Airport (to, from) the address you indicated in question no. 2?

☐ yes ☐ maybe ☐ no

2. Please rate the following factors according to the importance which you gave to each of them in reaching the decision above. (Place a checkmark ✓ for each factor.)

	Importance		
	No	Little	Much
Travel Time			
arriving in the shortest time possible	___	___	___
travelling in light traffic	___	___	___
arriving at the intended time	___	___	___
travelling as fast as possible	___	___	___

Employee Survey

1. In what type of vehicle do you plan to leave the Atlanta Airport today?

   ☐ private car ☐ taxi
   ☐ rental car ☐ public bus
   ☐ other _____
   please specify

2. In what type of vehicle did you arrive at work this morning?

   ☐ private car ☐ taxi
   ☐ rental car ☐ public bus
   ☐ other _____
   please specify

3. If you either arrived at work in a private car or rental car, or will be leaving from work in a private or rental car, please check one of the following:

   ☐ I will be the driver ☐ I will be a passenger

4. About the car in question three, please check one of the following:

   ☐ The car was driven to the airport to drop me off for work.
   ☐ The car is parked in a parking lot at the airport.
   ☐ Other _____
   please specify

5. Please state the name of the street intersection nearest your home.

   _____ _____ _____
   Street Intersection City County

6. Why did you choose that area in which to live?

   ☐ Nice homes ☐ Convenient to the airport
   ☐ Good schools ☐ Quiet area
   ☐ Other _____
   please specify

The Metropolitan Atlanta Rapid Transit Authority is considering extending its rail rapid transit service to the Airport. The layout of the entire rapid transit system is shown in the accompanying map.

The Authority would like to ask you the following questions in order to better plan for the type of service which it may provide at the Airport.

1. Would you ride on the rapid transit line (from, to) the airport (to, from) the address you indicated in question no. 5?

   ☐ yes ☐ Maybe ☐ no

2. Please rate the following factors according to the importance which you gave to each of them in reaching the decision above. (Place a checkmark ✓ for each factor.)

	Importance		
	No	Little	Much
Travel Time			
arriving in the shortest time possible	___	___	___
travelling in light traffic	___	___	___
arriving at the intended time	___	___	___
travelling as fast as possible	___	___	___
Reliability			
arriving without accident	___	___	___
riding in safest possible vehicle	___	___	___
Cost			
total trip cost	___	___	___
Vehicle Condition			
riding in a clean vehicle	___	___	___
riding in a new, modern vehicle	___	___	___

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GEORGIA TECH PARKING STUDY

prepared for the

GEORGIA INSTITUTE OF TECHNOLOGY

by

FREDERICK D. PUNCKE, JR.

and

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September, 1973

10 August, 1973

Dr. Joseph M. Pettit
President
Georgia Institute of Technology
Atlanta, Georgia

Dear Dr. Pettit:

We are pleased to present our report prepared as part of the requirements for the Master's Degree in Civil Engineering. This report deals only with parking and related topics on the Georgia Tech campus as stated in the Circulation and Parking Surveys for the Georgia Tech Campus proposal.

We wish to express our thanks to Dr. P. H. Wright, School of Civil Engineering, for all of his assistance and guidance during every stage of the study. We also wish to thank James I. Elderman for all of his assistance.

We hope the recommendations made in this report will greatly alleviate many of the parking problems and irritations found presently on campus.

Respectfully submitted,

Frederick D. Puncke, Jr.
LT/CEC/USN

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PREFACE

In 1882, legislator Nathaniel E. Harris introduced a resolution in the Georgia House "to investigate and consider the propriety and expediency of establishing in this State a school of technology..." The first appropriation for the support of the school was authorized by the legislature in 1885. In that year, in Germany, Karl Benz developed a successful internal combustion engine and installed it in a three - wheeled carriage. Three years later, opening cermonies were held for what was to become Georgia Institute of Technology. At that time, the nine - acre campus was located in a rural setting outside the city limits of Atlanta, and it had no parking problems.

The 1973 campus of Georgia Institute of Technology occupies over 280 acres, of which more than 25 acres is required for its 7,304 automobile parking spaces. As is the case on most university campuses, automobile parking problems constitute a source of irritation for students, faculty, staff and administrators alike. Seeking answers to campus parling problems, this parking study was undertaken in January, 1973 as a student research project by graduate students Frederick D. Puncke, Jr. and Michael L. Frey. A companion study of traffic circulation was undertaken by graduate students Kenneth O. Voorhies and Jeffrey Wynne under the direction of Dr. Donald O. Covault.

This study was authorized by President Joseph Pettit and was performed with the cooperation and support of the Office of Planning and the Parking Advisory Committee. It was partially financed by a university research and training grant from the Urban Mass Transportation Administration Administered by Atlanta University, and that assistance is gratefully acknowledged.

Paul H. Wright
Faculty Adviser

CHAPTER 1

PURPOSE AND SCOPE OF STUDY

Reportedly the single most influential tool used by man to reshape his environmental has been the automobile. What has been accomplished with its usage is not within the scope of this report, except where the automobile's usage affects the orderly running of the Georgia Tech Campus. The tremendous growth of university enrollments has been in a large part due to new accessibility of a means of transportation. But once the student or faculty member reaches the campus, the question of what to do with his car arises. As an urban campus, Georgia Tech has the problem of a limited amount of available land which also has to be utilized for classroom and administrative buildings, recreational facilities, housing, maintainence shops, etc. Squeezed into this limited area must be facilities for handling a large daily influx of automobiles. A parking lot is not considered a thing of beauty; very few organizations will include on a tour of their facilities a parking lot and point with pride saying that several acres of trees and grass were plowed under in order to lay several inches of asphalt for cars.

What is needed is a development plan that will preserve as much of the natural beauty of the Georgia Tech Campus while providing sufficient parking in the areas where it is needed to satisfy the requirements of the many diverse populations encountered at a university of this size. Future requirements must also be integrated into this development plan.

The objectives of this study were:

1. To make an inventory of all parking spaces on the campus, classified by type (faculty, student, visitor, curb, pay lot, etc.).

2. To conduct a study of parking practices. This study involved an examination of usage of existing campus parking spaces. It involved windshield surveys conducted at various times of the day (and use of time-lapse movies) to determine parking accumulation and turnover rates.

3. To make a survey of parking desires. This study consisted of interviews of parkers to determine information on destinations, walking distances, parking duration, and parker characteristics and irritations. This information was obtained either by direct interviews and by questionnaires affixed to vehicle windshield and returned by campus mail.

Of particular interest were possible changes that could be made to automobile circulation patterns in order to provide increased pedestrian and vehicular safety.

It is hoped that analysis of the data collected in these studies will be beneficial to the Parking Advisory Committee and the Vice President/ Planning in providing long-range solutions to the campus parking problems.

CHAPTER 2

SUMMARY OF RECOMMENDATIONS

With the expected growth of Georgia Tech's student and faculty/staff populations will come a proportional increase in parking requirements. Hopefully, this report will lend to the alleviation of some of the present problems associated with parking on the campus, and to possible actions to meet future parking demands.

A summary of principal recommendations follows:

1. Increase parking on the campus perimeter. The lots by the Placement Center, Coliseum, and Highway Lab Building were observed to frequently contain many empty spaces. Better usage of these lots should be encouraged. One way to do this would be to have a shuttle bus system. In the winter and during periods of inclement weather, buses would be a necessity. The buses would not have to make a complete circuit of the campus - two or three stops would be quite sufficient. Vans, such as those presently used by the Physical Plant and driven by students, represent one low-cost alternative. Another possibility would be to use trams such as used in Disney World. The vehicles should run on a schedule which would make the usage of these lots more attractive. Also an advertising campaign to "sell" the perimeter lots is advised.

2. Improve traffic flow along Third and Cherry Streets. Some of the most serious parking and circulation problems exist in the "hill" area along Third and Cherry Streets. From strictly a parking viewpoint, the most desirable alternative to improving traffic flow in that area would be to make Third Street one-way west from Brittain Drive

to Cherry Street, and Cherry Street one-way south between Third Street and Uncle Heinie Way. It is recognized, however, that providing one-way movements on these streets would complicate traffic flow to the north and east from the hill. On the other hand, elimination of parking from one side of these streets would worsen an already serious parking situation for that part of the campus. The elimination of about ten parking spaces near the intersection of Third and Cherry Streets would provide limited short run traffic improvements where the needs are greatest. More extensive circulation improvements can be realized when the remaining sections of Ferst Drive are completed.

3. Change the use of the library faculty card lot. On three different occasions, surveys were made of the faculty card lot below the library. The highest occupancy rate ever noted was only 72%, even though the lot is oversold. The demand for central campus parking is too high to allow this to continue. Two possible courses of action to make use of the empty spaces were considered: 1) sell more passes to the lot, or 2) make the lower part of the lot (28 spaces) into short term parking for the library, the hill, and the computer center. The latter approach, which would involve moving the card operated parking gate to close off only the upper lots of 80 spaces, is recommended. The need of short term parking in this area was noted by 42% of those responding to the questionnaires. This is the only available parking area that could be used that is within reasonable walking distances.

4. Eliminate parking on a portion of Campus Drive. Campus Drive is a narrow road that has two-way traffic, but due to its heavy cross campus traffic load, it is not suitable for conversion to a one-way street. The recommendation here is to allow parking only on the north side of

the street between the exit from the Architecture Building faculty parking lot and Techwood Drive. This would facilitate the off/on loading of Stinger passengers and at the same time improve traffic flow. The present two spaces used for short term parking for the computer center on Campus Drive can either be moved to the Library card lot as mentioned above or to the faculty lot by the computer center entrance.

5. Provide better utilization of the Georgia Tech Police Force. The Campus Police have to be made to function as more of a protective and security force that it now is. Students have mentioned that they are afraid to park their cars in certain parking lots (primarily the Coliseum and around O'Keefe High School) for fear of having hub caps stolen, windows smashed, or antennas broken, not to mention the risks of being attacked. A check of police files (both campus and city) did not turn up such crimes in numbers sufficent to cause this concern. Even so, the police will have to patrol these areas as an insurance for the students. Also, many returned questionnaires (both faculty and student) mentioned that there is too little enforcement concerning cars that have no parking permits. A more vigorous enforcement program to control unregistered vehicles would bring added revenues to the school, make more accurate predictions of parking requirements possible, make more parking spaces available, and produce a feeling of cooperation with the police force.

The use of lighting in all lots presently without it is strongly encouraged, especially those on the perimeter.

6. Provide more parking for the Area III dormitories. More parking is presently needed for the Area III dormitories. Some of the urban renewal land could be leveled without disturbing the trees, graveled and lighted to provide an immediate solution if adequate

security was afforded. The traffic flow should be changed as planned by the Office of Planning now that McMillan and Curran Streets have been closed by the Tech Parkway extension. Flow should be as shown on Figure 1. Parking should be eliminated along Eighth Street from Hemphill to Northside Drive, and along Sixth Street from Ferst Drive west to McMillan Street.

7. Provide better traffic flow in the parking lot by the Physics Building. It is strongly recommended that the driveway off of Ferst Drive into the lot by the Physics and Civil Engineering Buildings be redesigned. Seven spaces would be lost with the recommended design shown herein, but it would provide greater safety and easier egress and ingress. Since the upper lot by the Civil Engineering Building is seldom more than 85 percent full, the loss of seven spaces is not critical.

8. Coordinate a shuttle service with MARTA. Long range planning to encourage MARTA rapid rail usage by students, faculty, and staff should include a shuttle system inaugurated by MARTA or Georgia Tech individually or jointly.

9. Provide more bike racks. To encourage the use of bicycles on campus rather than cars, more bike racks should be installed near each entrance to each classroom building and dormitory.

10. Additional parking facilities. Many students proposed the building of a multi-level parking garage on campus to provide the necessary parking spaces without paving over the whole campus. Consideration should be given instead to making use of the air rights over the North Freeway (Interstate 75 and 85). It has been proposed by the state that the freeway be widened to four lanes in each di-

rection. A parking platform could be constructed over the land at the same time that the widening is taking place. This would provide the required parking while at the same time preserving the campus greenery. The possibility exists for Federal funds to be used on the project as a pilot program. Use of this space could be by Georgia Tech, by businesses to the east of the freeway, or by people boarding MARTA trains at North Avenue.

11. Provide more parking for visitors in all lots.

12. Make Dalney Street one-way north. This would improve access to and from the EES Administration Building while maintaining the needed parking on both sides of the street.

CHAPTER 3

EXISTING CONDITIONS

The existing parking conditions on campus provide the base which must be used for any future plans for improvements.

Frequent reference will be made to various illustrations throughout this discussion. These are: A Georgia Tech Campus Map Showing Traffic Zones, Existing Curb Usage, and Existing Off-street Usage, numbered Figures 1, 2 and 3 respectively.

As can be seen from Figure 1, the campus is crisscrossed by many city streets. Many of the smaller streets are now under the control of the Institute, but the major smaller remain under control of the city. A more extensive discussion of traffic flow problems is given in the traffic circulation study. This report is concerned only with parking and traffic flow as it affects parking. Figure 2 indicates how the curb parking is presently allocated. It is based entirely on posted signs and curb markings as of 31 July 1973. This point is mentioned because the campus administration frequently re-signs and repaints areas without advance publicity. Also, the campus parking regulations, parking usage, and parking enforcement policy each disagree to varying degrees with the information gathered as of 31 July. The only type of curb parking is non-metered. There are 1,922 curb spaces (based on a twenty foot parking space length*) as

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*Ideally, a curb space should be 22 feet in length to facilitate parking and unparking. During busy periods, parkers in unmarked curb spaces tend to use less than 20 feet of space, as evidenced by curb occupancy rates greater than 100 percent.

of 24 July 1973. Of these, 309 are for faculty staff use, 315 are for central campus permit holders, and 1,298 are for perimeter permit holders. These data are based on the map in the student regulations and not on posted signs.

Surface parking lots exist throughout the campus as shown by Figure 3. In addition to fraternity and other private lots, the university controls many areas, subdivided into three main categories--faculty/staff, perimeter, and central campus. The parking regulations clearly state who qualifies to use different classes of lots. However, once again, the regulations, enforcement, and usage do not always agree with what was noted on 31 July. There are 5,382 off-street spaces (as of the 24 July inventory); 1,725 faculty/staff, 1,181 central campus, and 2,417 perimeter, with most of the private lots being included in the perimeter count.

Recent improvements to parking caused by the closing of Hemphill between North Avenue and Ferst Drive have made available 220 more faculty/staff spaces, 110 graduate spaces (considered "central campus" in all counts), and 50 more undergraduate central campus spaces. These are included in the above counts.

The obvious disagreements between posted signs and markings, the parking regulations, the enforcement practices, and the actual usage of the facilities should be resolved. The disagreements caused much confusion during this study, and resulted in an inaccurate count of private lots, which forced a partial reinventory of spaces.

Since regulation of parking stickers is presently being revised by a joint student/faculty committee, this report will not concern itself with this aspect of the problem. The committee findings should solve problems such as the recent experience where "one year" permits suddenly expired after nine months.

CHAPTER 4

FIELD STUDIES

In the course of the Parking Survey, several field studies were conducted to determine the characteristics of parkers utilizing the campus parking facilities. In order to expedite data collection, to determine usage and to allow a comparison of circulation results, fifty-six traffic zones were established for the survey area. These are shown in Figure 1 and were established so that each is composed of like usage where possible; e.g., the parking for the Administration Building and the building itself are in zone 32, while the E.E. parking lot is considered a separate zone because of its size. The boundaries of the total survey area do not exactly match the existing boundaries of the Tech Campus. The following fringe areas were included because they are presently very much of the campus and are expected to remain so for some time: north of Tenth Street, east of the North Freeway, and south of North Avenue. Conversely, the area inside Northside Drive, Tenth Street, and the survey area is not yet an active part of the campus, and it is not expected to be for some time to come.

The actual studies were mostly conducted during the 1973 Spring quarter.

On 14 May 1973, a complete inventory of the survey area was made. Four main parking categories were established for this count - faculty/staff, central campus, perimeter, and other (including short term, visitor, loading, physical plant, etc.). These designations were used for both curb (street) and lot (off-street) parking. The areas for

each category were based entirely on the campus parking regulations. Later, it was discovered this was not a valid assumption and consequently a partial reinventory was made on 24 July to correct major discrepancies. However, a count of private parking spaces (which are made up mainly of fraternity lots) was not made for three reasons. First, the time and effort that would be required to inventory the lots could not be justified in light of the minor impact these lots have on the campus parking situation. Second, all of the private lots are in areas that the university eventually plans to obtain. If present plans are realized, these spaces will continue to be kept in the same category under which they are presently listed. Third, the spaces ares used mainly by the category of students that the lots are listed under and as such will not alter the scope of the survey.

The complete inventory of parking spaces by zone is presented in Table 1. There are 7,304 parking spaces in the survey area. Of these, 2,034 are faculty/staff (1,725 off-street, 309 curb), 1,496 central campus (1,181 off-street, 315 curb), 3,715 perimeter (2,417 off-street, 1,298 curb), 28 in the one private lot counted (Baptist Center Lot), 23 visitor (all off-street) and 8 short term spaces (all curb). There are also 40 spaces designated for motorcycles, and 54 designated as "loading zone". None of the spaces is metered. All are covered by the parking regulations, according to the regulations. However, as mentioned, in practice this is not not so because of the city streets and private lots the university cannot control, and due to the markings and signs that conflict with the regulations.

Many of the zones were studied in detail. Those so studied were chosen because they were representative of various categories of parkers,

because they were high usage zones, and because they were zones where demand for a limited number of spaces was great.

Accumulation curves were developed for 13 zones. The method used was to count the number of cars present once an hour on the half hour. For several zones, more frequent counts were made.

Arrival rates for zone 26 (Library Card Lot) were determined by noting the time that cars entered the lot on a typical day. This information was used in formulating the decision that the parking gate now located at the entrance to the lot could be moved, as will be discussed later.

Time-lapse photography was also used in this zone to determine parking duration, accumulation, and turnover rate. The camera was not used in other zones because of heavy foliage on trees making it difficult to locate the camera where an entire lot could be covered adequately.

An extensive study of the EE lot (zone 24) was also conducted. It consisted of noting the license plate on each car at the time it entered or left the lot through either of two entrances. (The third entrance was blocked off for the day.) By cross reference, the actual length of time each car was in the lot was found, thus giving duration. Accumulation and turnover were also determined from the data.

The results of all of the studies will be discussed in detail in subsequent Chapters.

To obtain more detailed information on parker desires and practices, a survey was conducted the week of 28 June during the Spring quarter. The survey was conducted using a questionnaire (Figure 5) that was handed out on all five days of the week. Approximately the same number of questionnaires were put on the windshields of all the cars in randomly selected zones each day. No zone was covered more than once, and the

time of distribution was from 10 A.M. to noon in order to have the largest sample possible. To encourage parkers to respond to the questionniare, articles were placed in the campus newspaper, The Technique, for the two editions immediately preceding the survey week.

From the survey, the following information was obtained for each zone:

1. employment and/or classification of parker,
2. length of time parked in the zone,
3. why that particular spot was chosen,
4. if the respondent usually parked in that zone,
5. the first destination after parking,
6. whether the parker planned to park anywhere else during the day,
7. the mode of tavel of the parker to his first destination after parking, and
8. if the parker was a commuter or lived on campus.

The questionnaire was also analyzed based on the parker's classification (student, faculty, visitor, etc) for:

1. length of time parked,
2. number of people who rode in the car that day,
3. number of vehicles the parker has registered on campus, and
4. the parker's thoughts on planning, campus transit, campus parking facilities, sources of irritation, and potential use of MARTA to commute to school.

There was space on each questionniare for comments by the parker, and these were extremely useful in gaging the validity of the questionnaire and in bringing out problems that had been encountered while parking on campus. The results of the questionnaire are discussed in Chapter 6 and shown in Tables 3 and 4. Table 1 shows the percent return of the questionnaire by zone.

CHAPTER 5

PARKING CHARACTERISTICS

Accumulation and usage surveys were made at the major on campus parking areas that are provided for students, faculty, and staff.

As expected, usage of the closest, choice lots peaked early in the morning; the large EE lot, with 421 spaces for faculty and students, had an average of only 105 spaces left by 9:00 A.M. on two separate mornings. The next closest large lot to central campus is at 5th and Fowler Streets. This is a "student only" lot with 193 spaces; it was 87% full before 8:00 A.M. (mostly overnight parkers). On the Northwest side of campus, the Civil Engineering/Physics/Graduate Lots in Zone 6 never got a higher usage than 64%.

Parking in the Student Center free lot (Zone 9) and along Ferst Drive is extremely popular, especially at lunch time. Street parking in this area occupancy peaked at 105% by 11:00 A.M. and the lot peaked at 96%, also at 11:00 A.M.

Table 2 gives the parking accumulation data for 13 major campus parking areas, with the days and dates that the surveys were made and the number of spaces available in each area (by lot and on curbside). The number of spaces used with the corresponding percentages for each hour are given. Due to time limitations, the surveys were made only on Mondays and Wednesdays, with two exceptions. From personal observations, it was decided that the Tuesday/Thursday parking demands were less than those on Monday. Wednesday/Friday. Each set of results is also graphed to more easily show the demand peaks on Figure 6.

The overall pattern for student and faculty parking facilities follows the same pattern: peak in the morning around 10:00, decrease during the noon period, indicating the off-campus lunch break, a smaller peak in the afternoon and then a rapid decrease starting about 2:30. Staff parking peaked earlier in the morning and decreased later in the afternoon with a more pronounced slope that the student/faculty graphs.

Extensive studies were made at both the Library Card Lot and also on the Hill around the Administration Building. These were both considered high demand areas even though the Library Lot did not have the expected high usage.

As can be seen in Table 1, faculty parking spaces are available in almost every zone, while students are for the most part limited to certain areas of the campus.

From four extensive studies conducted, the following information is presented:

Date	Zone Location	Turnover (vehicles/space)	Average Duration (hours:minutes)
14 May	9 Student Center	1.95	3:49
21 May	24 EE Lot	2.70	3:26
14 May	26 Library Card	0.78	5:54
14 May	32 Hill	2.05	3:56

(Turnover rates of less than 1.0 show very poor usage is being made of a lot.)

CHAPTER 6

RESULTS OF QUESTIONNAIRE SURVEY

The survey questionnaire was developed to obtain answers to specific questions from people parking on campus. A total of 5,171 questionnaires were randomly placed under automobile windshield wipers during the week of 28 June 1973. Of these 1,549 were returned (of which only 10 were not usable). This represents a 30 percent rate of return which is considered very satisfactory. On Monday during the survey week, a heavy rainstorm soaked many of the questionnaires, but this appeared to have little effect on the return. Many people dried out and completed the forms and returned them through Campus Mail. In fact, the rate of return for Monday was higher than the overall rate of 30%. For the week, returns by zone varied from 7% to 71%.

Table 1 shows complete rates of return. Tables 3 and 4 show complete return data from the questionnaires classified by employment of the parker and by zone respectively. A sample questionnaire is shown as Figure 5.

Major findings from the questionnaire are varied. Taking first an analysis by employment, it appears that for all employment categories the average parking duration is about seven hours - except for visitors and dormitory residents. Of the respondents, 90 percent drove in along and only 8.6% had even one passenger. Higher joint ridership would provide more parking spaces but the probability of this is small due to the varying working schedules. Sixty-one percent of the responding faculty/staff members have two cars registered in their names on campus and so do a great number of other employees. Fifty-five percent of the responding

students only have one car registered.

Of the opinion questions, 55 percent of the faculty/staff/employee respondents preferred the protection of landscaped open areas on the campus to the development of more convenient parking area. All student groups favored landscaping and open spaces by greater than a two to one margin, which seems to indicate that they are willing to park in perimeter lots and walk and/or be shuttled to their destinations. This is borne out by the next question. Fifty-six percent of faculty/staff/employees would not be willing to park in perimeter lots and be shuttled to their destinations while sixty-two percent of students would. All categories felt that overall campus parking deserves only a fair rating. Remarks from respondents discussed in Appendix B, showed reasons why this is so.

Major sources of irritation centered mainly on lack of parking spaces through the campus and lack of short term parking spaces near the Post Office, Student Center, Library, Computer Center, etc. As will be shown, there actually is no overall lack of parking spaces, but there is a great need for more short term spaces in the locations noted.

The last question dealt with whether people will use MARTA when completed to travel to and from campus provided connections were available to the campus. Use of MARTA would lower the number of cars coming on campus. Response was divided equally between a MARTA usage some of the time and MARTA would not go near the respondent's residence. This implies at least a partial conversion to MARTA for some respondents.

The questionnaire was also analysed for response by zone. (A zone map is as Figure 1.) From Table 4, the type of person who usually parks in an area can be determinied. For instance almost all of the parkers in zone 9 (student center upper lot) are students. The duration question

again bears out an average parking duration of about seven hours, except for zones with dormitories and fraternity houses, where longer periods are noted. Reasons for parking in a space varied by zone, and are shown on Table 4. Most first destinations were buildings close to the parking spot, indicating a desire to utilize space within a short walking distance when available. Almost everyone presently walks from parking space to destination, though some evidently bring bicycles in with them, park, and then ride them to their destinations. The overwhelming majority of campus parkers live off campus and drive in daily. Those that do live on campus usually only drive their cars when going out at night and on the weekends.

The following conclusions have been reached by correlating answers from our questionnaire, specifically comparing the following: 1) question number 18, school or departmental affiliation with, 2) the zone in which the questionnaire was handed out (plus the zone lived in if on campus); 3) an answer of 1 or 2 to number 6 (Do you normally park on this area) and 4) a check in block 44 of question number 16 - major sources of irritation - lack of parking spaces. It was assumed that if a person parked in one area (because it was close to his deparment or dormitory) all or most of the time and said that there was a lack of parking spaces on campus, he was reporting on just the area he was most familiar with. This, hopefully, would be a valid indication of the actual condition in the zone.

It was decided that if greater than 50% of the forms returned for a zone considered the parking to be inadequate it would classify that zone as deficent in parking spaces. Based on the above rationale the following zones are considered to be deficient in parking spaces; 1, 24, 31, 32, 33, 35, 38, 39, 40, 42, 47, 48, 49, 51, 52, 54, 55, and 56. Over 50% of the users of zones 3, 5, 19, 22 and 29 also said that their zone

suffered from a lack of parking spaces. Under closer examination, it was noted that zones immediately adjacent to those zones always had available parking spaces but this would require a slight walk to get to their destinations; hence the respondents expressed dissatisfaction with the parking. Figure 4 shows the zones with the most serious parking problems.

CHAPTER 7

CAMPUS POPULATION

The population of the university is shown in Table 5 for the past ten quarters, as are projections for the fall quarter for the next ten years. Even though actual attendance is shown to be declining during the past two and a half years (Figure 7), the projections from the Office of the Registrar show a continual rise in attendance in the future.

For the quarter during which all of our data was collected (Spring 1973), the student enrollment by classes was:

Freshman	19.0%
Sophomore	18.9%
Junior	19.9%
Senior	21.0%
5th Year	0.1%
Masters	14.3%
PHD	4.9%
Special	1.9%
	100.0%

There were 2,282 faculty and staff members, of which approximately 800 are faculty.

By 1982, the student population should be approximately 10,000, and the faculty/staff about 3,200. With only 7,304 spaces (2,034 faculty/staff and 5,270 student) presently available it can be seen

that 1,166 more faculty and 4,730 more student spaces will be needed - if all new students and faculty members drive and park on campus. However, only 81 percent of the present faculty/staff and 63 percent of the students presently park regularly on campus. This indicates a need today of only 1,850 faculty/staff spaces and 5,070 student spaces, both well below the number available, and this percentage is not expected to change a great deal in the future. However, the parking spaces are not necessarily where the demand is. Central campus demand is higher than both the parking lots and the circulation paths can handle. Also more parking is required near the Area III dormitories. For 1982, it is estimated that only approximately 2,592 faculty/staff spaces and 6,300 student spaces will be needed. This is 558 more faculty and 1,030 more student spaces than now provided. If the 1984 Campus Plan is followed, the location of these spaces will be to the west of the existing buildings in the urban renewal land of zones 1 and 2. The specific locations of future parking lots depend on the final locations of buildings which the lots will serve.

CHAPTER 8

RECOMMENDATIONS

The following recommendations are the results of a rather extensive survey conducted over a period of two school quarters during 1973 and reflect the correlation of the questionnaire returns, field studies and personal observations. As stated earlier, it is hoped that these recommendations can prove to be of assistance in making Georgia Tech a more accessible place for the large population of daily commuters, a help in finding a more convenient spot for long term parking for those who live on campus, and a safer campus for all.

Traffic Improvements:

Most of the traffic improvements will be discussed by the circulation part of the Transportation Study. However, this report contains some that are necessary because of their association with the parking situation. The improvements will at the same time aid in the elimination of pedestrian/vehicular conflicts and also the provision of a workable traffic circulation system that will accomodate the present and future needs of an expanding university.

1. The "Hill" Area. At the present time, some of the most serious parking and circulation problems exist in the "hill" area, Zones 31, 32, 33 and 35. These problems are manifest along Cherry Street and Third Street which border these zones on the west and north. Narrow street widths, steep gradient, and inadequate sight distance inhibit vehicle movements and create hazards to pedestrians. The most serious problems exist at the intersection of the two streets south of the library where

the worst physical features of the streets are combined with heavy pedestrian movements.

In the short run, three alternatives for dealing with the parking and circulation problems in the "hill" area are apparent: 1) make Third Street one-way west from Brittain Drive to Cherry Street and Cherry Street one-way south between Third Street and Uncle Heinie Way; 2) eliminate parking along one side of Cherry and Third Streets; 3) provide limited improvements where the needs are greatest by restrictive parking near the intersection of the two streets.

None of the three alternatives is completely desirable. The first alternative would provide smoother vehicle movements but would make it difficult to travel to the north and east from the "hill". The second alternative would worsen the already serious parking shortages for that area of the campus. It is likely that providing a higher level of traffic service in the hill area will encourage drivers to travel faster, and conceivably this could increase rather than decrease hazards to pedestrians.

The third alternative, which is recommended, would be to eliminate parking on both sides of the streets for about 75 feet south and east of the intersection of Cherry and Third Streets. Implementation of this recommendation should facilate bus loading and unloading, provide for smoother movements in the intersection area and improve pedestrian safety. It would result in the loss of about ten parking spaces. Affected reserved space parkers could be reassigned spaces in the lower part of the faculty card lot west of the library provided the recommendations relating to the use of that faculty are implemented.

To provide badly needed circulation improvements, the authors believe that the extension of Ferst Drive to Cherry Street should be completed as soon as possible. It is scheduled to be completed from Fifth to Third

Street by 1975, and to Cherry by 1984. It is recommended that the latter part be scheduled for completion sooner if such is feasible.

2. Eliminate parking on a portion of Campus Drive. Like Cherry Street, Campus Drive is too narrow to carry two-way traffic safely but due to its location would not be suited to one-way traffic. The recommendation here is to ban parking on the south side of the street (except the diagonal faculty parking across from the EE lot). Parking can remain on the north side of the street between Atlantic Drive and Techwood Drive. This would facilitate the on/off loading of Stinger and shuttle van passengers while at the same time improving traffic flow. Presently two spaces on the south side of the street are set aside for short term parking for the Computer Center. These will have to be eliminated in their present location, but can be relocated either in the library card lot or in the faculty lot by the Computer Center entrance.

3. Provide better traffic flow in the parking lot by the Physics Building. There are now two possible entrances into the Civil Engineering, Physics and Graduate Student parking lots, one through the Civil Engineering, Faculty lot and the other off of Ferst Drive. The Ferst Drive entrance should be redesigned so as to eliminate the hazardous conditions now existing. Using the plan presented in Figure 8 will greatly decrease the possibility of an accident. Presently it is impossible to see a car coming in the opposite direction behind the parked cars when attempting to go in or out of the lot until they meet at the small opening. With the new design only seven parking spaces will be lost, but as noted earlier, this lot is practically never full, and the increased safety greatly outweighs the loss of the spaces.

4. Make Dalney Street one-way north. This change would improve the access of the EES Administration Building as the street is too narrow to safely carry the existing two-way traffic. No parking spaces would be lost, and this would make it easier to get into and out of the parking spaces and eliminate the bottleneck now produced by a parking car.

Parking Program:

By 1892, it is expected that the student population will have increased by approximately 2,000. The faculty/staff size will also increase proportionally. Those two facts coupled with the present universal opinion that the parking facilities now available are only fair to poor (47% replying to the questionnaire rated them fair and 23% rated them poor) points out the need for wholesale improvements in all aspects of parking. The following recommendations are made in the interests of meeting present and future parking needs.

1. Increase parking on the campus perimeter. The object of a parking space is usually to get as close to a person's destination as possible, hence the overwhelming popularity of the centrally located EE lot. Unfortunately, this lot does not have enough spaces to meet the demand. At the same time that students are driving around the EE lot waiting to move into a vacated space, lots on the perimeter such as the Placement Center, the Coliseun, and by the Highway Lab Building always contain many empty spaces. But the demand is not out there. Efforts should be directed to making these lots more attractive as parking areas. One method of entice students to use these lots would be to provide a shuttle van system from the lots to one or two points in the central campus. The vans to be used are like those presently used by the Physical Plant Department and could be driven by students. These vans would be more attractive for these shuttle requirements

because of the low initial outlay, the availability of local maintainence personnel for repairs, and the lack of congestion that is usually produced by a larger bus such as the Stinger on Central Campus narrow streets. Another possiblity would be the use of trams like those used at Disneyworld. How the trams would be handled on the narrow roads would have to be ascertained. Perhaps a Federal demonstration grant could be obtained for the tram system. The scheduled trips would have to be frequent enough to attract the students. More publicity of the lots would also help.

2. Change the use of the faculty card lot. On three different occasions during Winter and Spring Quarters (1973), surveys were made of the faculty acard lot below the library (zone 26). The highest occupancy rate noted was only 72%. The demand for central campus parking is too great to allow the non-usage of these empty parking spaces. There are two possible courses of action available to make a more profitable use of the empty spaces: a) sell more passes to the lot, or b) convert the lower part of the lot, 28 spaces, into short term parking for the library, the Hill, and the computer center. The card operated parking gate would have to be moved to close off only the upper portion which consists of 80 spaces. The latter is recommended. The need for short term parking in this area was noted by 42% of those responding to the questionnaire. The time limit for short term parking could be set by the administration or the Parking Advisory Committee, but would have to be strictly enforced to keep drivers from taking advantage of the situation.

The recommendation to move the gate immediately raises a question. What is the chance of someone who has a card not being able to find a space? As will be shown, this probability is 0.025; i.e., the fraction of parkers turned away is 2.5%. But, this figure is de-

ceptively large. It is based on the highest peak hour data noted only, and does not consider the additional room in the upper part of the lot that is not specifically lined for parking but where parking is possible. When these are taken into account, the chance of not finding a parking space in the upper lot is very small indeed.

To arrive at the 2.5% figure, the arrival rate of vehicles was measured on a typical day. Then it was determined that the arrivals followed a random Poisson distribution based on a Chi square test. Once it was known that the arrivals were Poisson, it was possible to develop the following table from HRB Special Report 79, An Introduction to Traffic Flow Theory:

percent occupancy	number of spaces	number of cards sold	fraction of parkers turned away
72	108	129	0.000
87	80	129	0.025
65	108	129	0.000
81	80	129	0.011

The 87% occupancy figure is the 72% figure adjusted to reflect the loss of the 28 lower spaces, and the 81% figure is the adjusted 65% figure. As can be seen, the 2.5% figure was for one peak hour of 72% occupancy. A lower peak occupancy percentage more typical of the average day is also shown (the 65%). Figures 6.10, 6.11, and 6.12 show where these percentages come from.

If it should turn out that there are complaints about lack of parking space the revised lot of 80 spaces could be less oversold. It is presently oversold 20%, which means that about 129 cards are issued.

3. Better utilization of the Georgia Tech Police Force. One way to entice more perimeter parkers is to provide a more active and agressive crime fighting police force. Students have mentioned that they are afraid to park their cars in certain parking areas (primarily the Coliseum and around O'Keefe High School) for fear of having hub caps stolen, windows smashed, or antennas broken, not to mention the risks of being attacked. Records from the Tech Police files show that crime has dropped during the past two months; the same is true for the Atlanta Police files for the area. This could be due to the fact that school is out for the summer and O'Keefe students are not present. In any case, the opinion of the Tech student body is that the crime situation is high, regardless of facts, and as long as a person feels unsafe, he will not park in an area which he considers unsafe. So to help attract people to the perimeter, a public relations campaign should be undertaken to publicize the fact that crime is low, that police patrols are adequate, and that a program of lighting the outlying lots is underway.

Eighteen percent of the returned questionnaires that contained additional remarks mentioned that there is too little enforcement concerning cars that have no parking permits. A more vigorous enforcement program to control unregistered vehicles is recommended. Such a program would bring added revenues to the school, make more accurate predicitions on parking requirements possible, and provide more available spaces. If the Police Force is too overworked to handle continuous ticketing, it would be a great help to hire someone who is a full time enforcer of parking regulations.

4. Provide more parking for the Area III dormitories. More parking spaces for Area III are presently needed. Of the respondents in this area, 69.5% reported "lack of parking spaces" as a major source of irritation with

regard to campus parking. Present plans include the provision of a paved lot in the area in the future. Should it not be possible to implement these plans at an early date, it is recommended that some of the urban renewal land be graded and that a temporary crushed stone pavement be provided. Such an area would also need to be lighted and properly patrolled. It is further recommended that traffic flow be changed to conform with the 1984 Campus Plan. Now that McMillan and Curran Streets have been closed by the Tech Parkway entension, traffic flow should be as shown in Figure 1. Parking should be eliminated along 8th Street from Hemphill to Northside Drive, and on 6th Street from Ferst Drive west to McMillan Street.

5. Coordinate a shuttle service with MARTA. Even though the completion of the MARTA rapid rail system is far in the future, the authors recommend that a plan for a shuttle service between the central campus and the nearby MARTA stations should be established. A fairly respectable return of 46% indicated a willingness to use the MARTA bus/train system (with shuttle connections to the campus). The system would be either a joint venture between MARTA and Georgia Tech, or by one of them alone.

6. Provide more bike racks. To encourage the use of bicycles on campus versus cars, more bike racks should be installed near each entrance of each classroom, administration building, and dormitory.

7. Additional parking facilities. Many students proposed the building of a multilevel parking garage on campus to provide a large portion of the needed spaces without paving over the whole campus. This would prove to be quite expensive. Consideration should be given instead to the utilization of the air rights over the North Freeway (Interstate 75 and 85). It has been proposed that the freeway be widened to four lanes in each direction. A parking platform could be constructed at the same time that

the widening is being done. Entrances to the lot could be at 4th Street on both sides of the freeway. This solution could greatly assist the alleviating the parking problems in this area of the campus and at the same time conserve campus green spaces. Again a possiblity exists for federal funds to be used on the project from a pilot program grant.

8. Provide more parking for visitors in all lots. It was decided to use the rule of thumb used by Wilbur smith and Associates in their Kent State University Traffic and Parking Plan that the parking requirements for campus visitors should be equal to one percent of the total campus population. This would require an increase of 44 spaces over what is now available, bringing the total number of visitor spaces throughout the campus to 103. The new spaces could be allocated in the same ratio as presently in use. The comment that more visitor parking spaces are required was made by those personnel who deal with visitors to the campus (public relations, etc.), so obviously the lack of visit or parking was noted by visitors to these people.

9. Make better use of existing faculty lots. Most of the faculty lots were observed never to be above 75% full a good part of the time (except those in the central campus area). The spaces not used are basically being wasted. They should be made available to others on some basis. Perhaps one way would be to get an exact count of the number of faculty members driving each quarter, and to allocate any excess of spaces in each area over the number of faculty parkers to visitors and students.

CHAPTER 9

FUNDING

It is beyond the scope of this report to recommend methods of financing any of the improvements. However, to just say spend money without any mention of methods to fund the improvements would be unrealistic. Several of our recommendations can be carried out with almost no cost except for "One - way" or "No Parking" signs. Lighting would be more expensive, but as a temporary solution, lights could be rented from Georgia Power, as was done recently for portions of the campus. The cost of more security should be minimal; the present force only needs to do a better job. With revenues from parking tickets and the increased purchasing of parking permits forced on the drivers by increased police enforcement, a portion of the added costs would be offset. Funds for shuttle service could come from a small fare, perhaps a nickel a ride if the funds presently used for the Stinger could not be used. If this is done, a smaller charge for parking permits for the lots served by the vans is recommended, maybe $7.50 a year. This lower fee for permits would possibly attract people to the lots and away from the central campus. Long range improvements should be funded in accordance with recommendations of The Report to the President's Advisory Committee for Parking On the Funding of State - Supported College and University Parking Facilities.

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APPENDIX A

FIGURES AND TABLES

FIGURE 1

GEORGIA TECH TRANSPORTATION STUDY

TRAFFIC ZONES

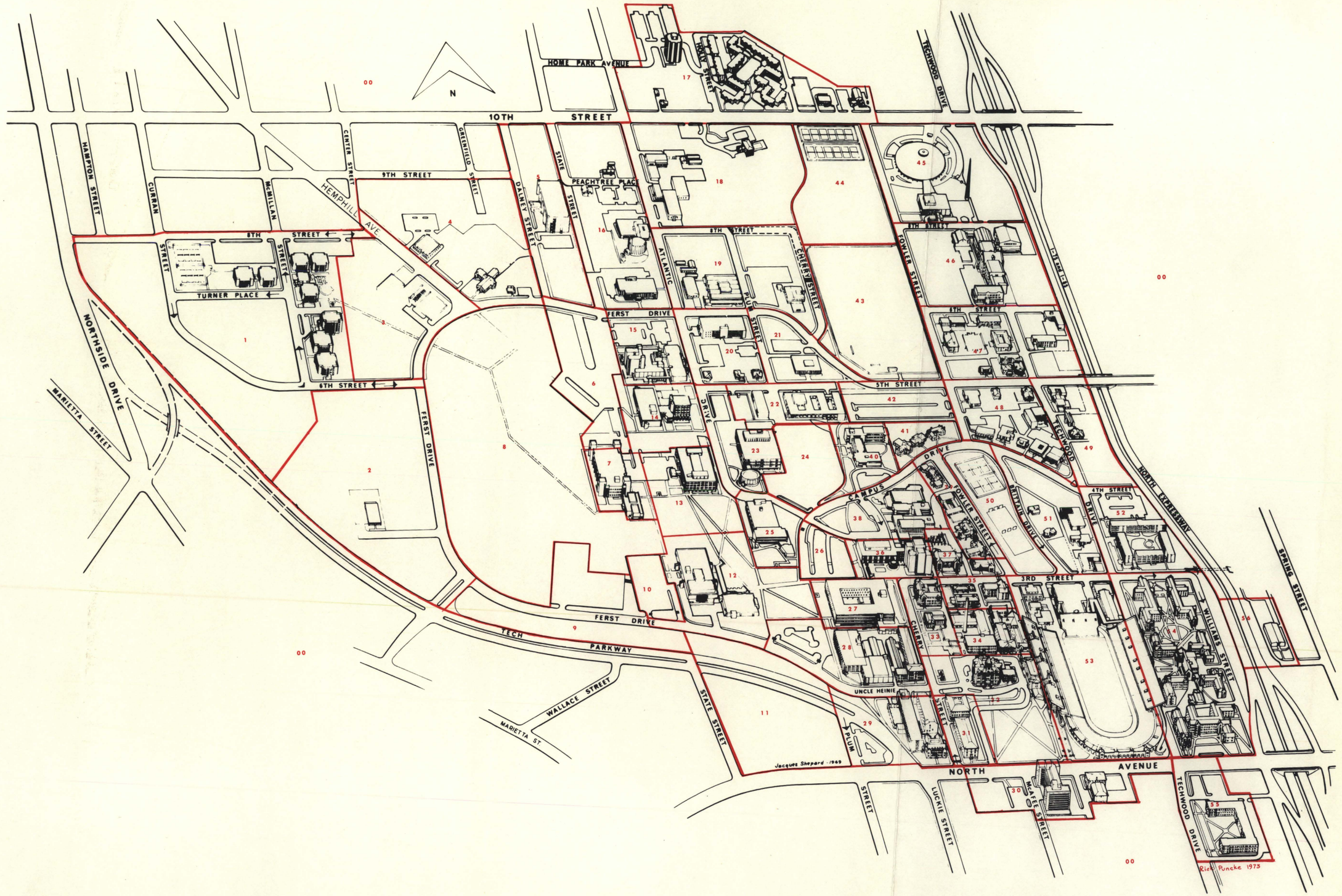
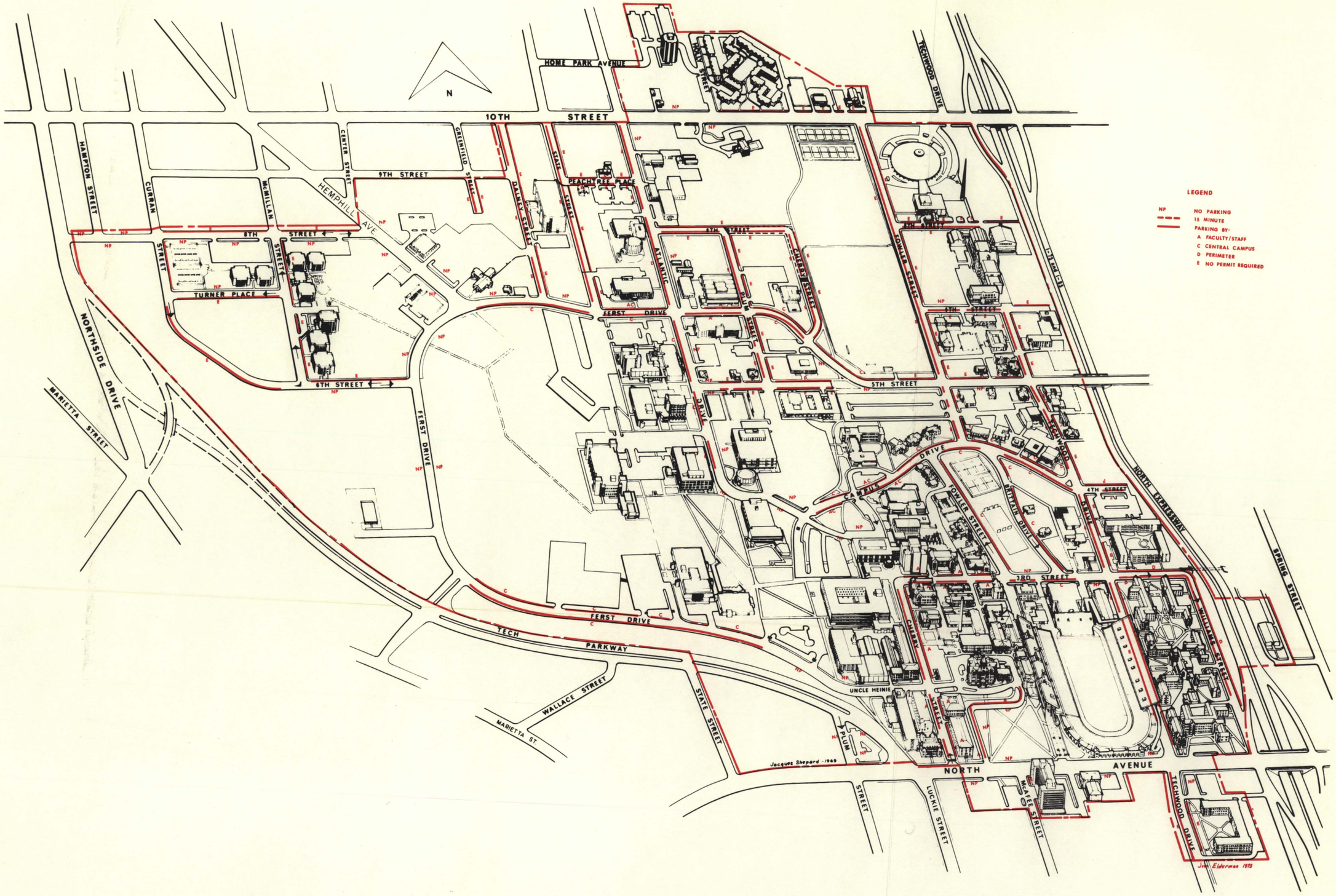


FIGURE 2
EXISTING CURB USAGE



LEGEND

NP NO PARKING
15 MINUTE
PARKING BY:
A FACULTY/STAFF
C CENTRAL CAMPUS
D PERIMETER
E NO PERMIT REQUIRED

FIGURE 3

EXISTING OFF-STREET USAGE

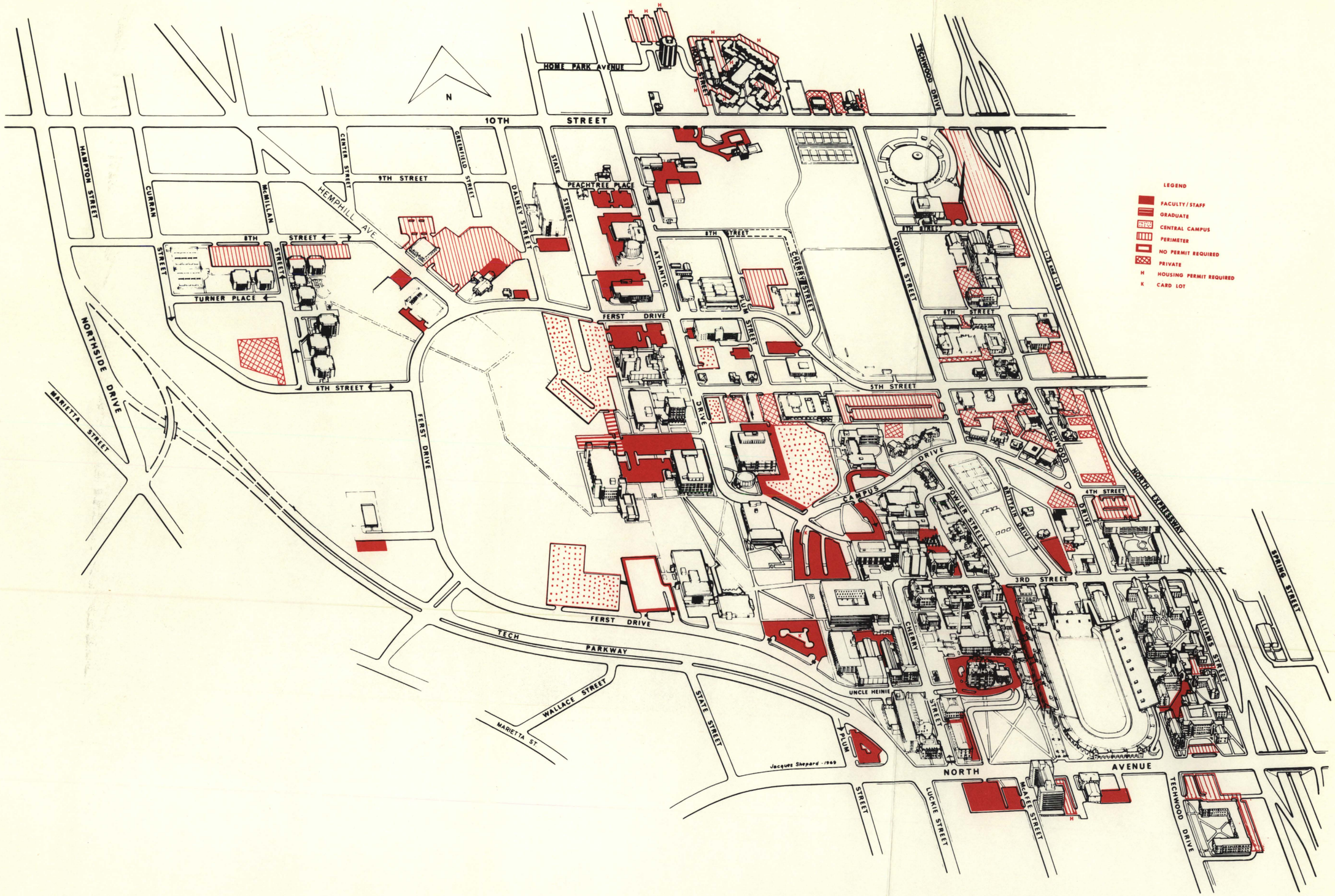
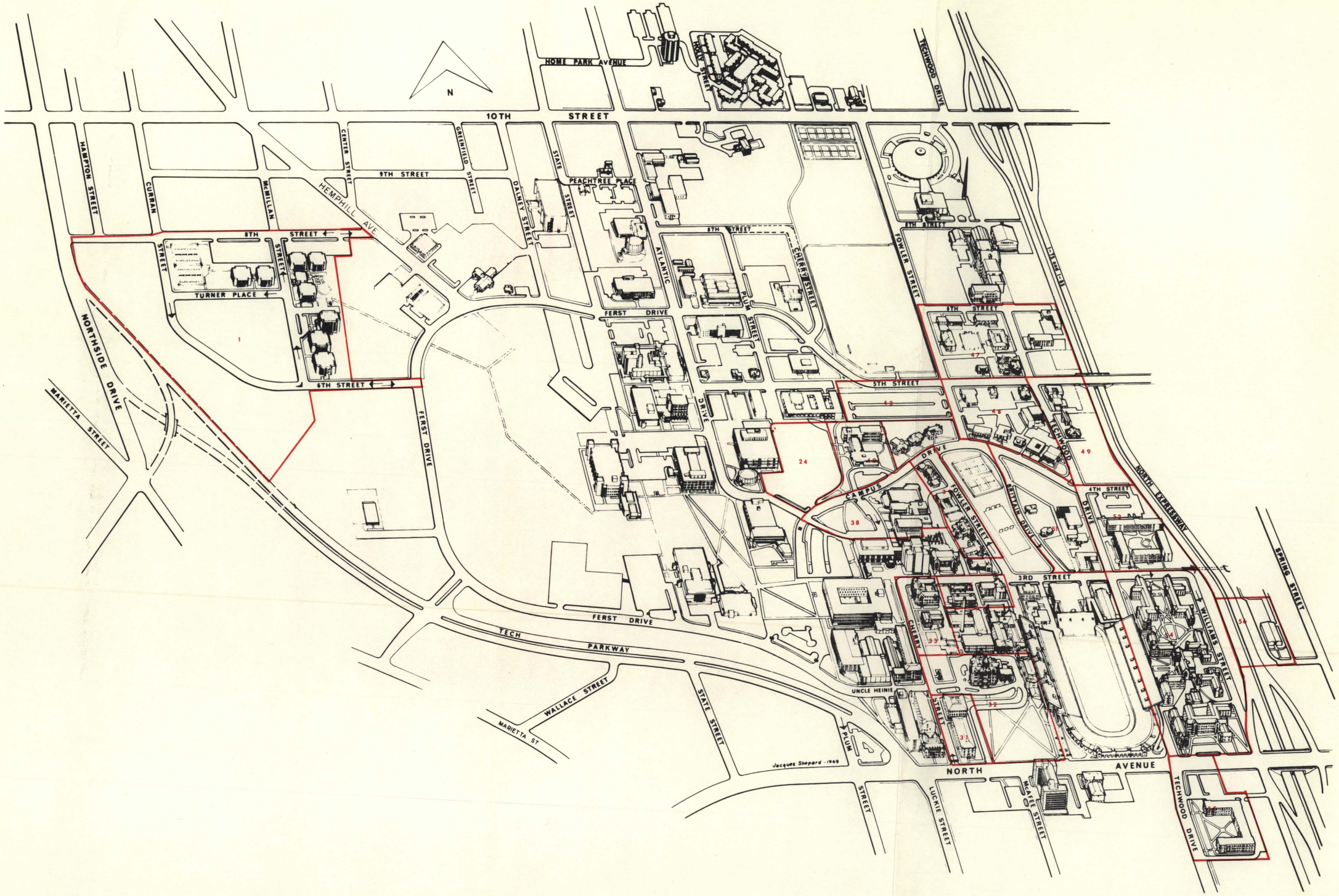


FIGURE 4

PARKING DEFICIENCIES



Pt #37

PARKING QUESTIONNAIRE

Coding Blocks

1. Please check day you reported on this questionnaire. — 16

M ☐1 Tu ☐2 W ☐3 Th ☐4 F ☐5 Sat ☐6

2. Please check employment and/or classification. — 17-18

Faculty	☐01	Graduate Student	☐06
Teaching Ass't.	☐02	Senior	☐07
Other Ga. Tech Employee	☐03	Junior	☐08
Visitor	☐04	Sophomore	☐09
Special Student	☐05	Freshman	☐10
Other_____			☐11

3. What time did you park in this spot today? — 19-20

Before 8 AM	☐01	12-1 PM	☐06
8-9 AM	☐02	1-2 PM	☐07
9-10 AM	☐03	2-3 PM	☐08
10-11 AM	☐04	3-4 PM	☐09
11-12 AM	☐05	4-5 PM	☐10
		After 5 PM	☐11

4. What time are you leaving this spot today? — 21-22

Before 9 AM	☐01	2-3 PM	☐07
9-10 AM	☐02	3-4 PM	☐08
10-11 AM	☐03	4-5 PM	☐09
11-12 AM	☐04	5-6 PM	☐10
12-1 PM	☐05	After 6 PM	☐11
1-2 PM	☐06		

5. Why did you park in this spot? — 23

Closest to destination	☐1
Only spot I could find	☐2
Closest to dorm or frat./sor. house	☐3
Going to bookstore/student center	☐4
Use reserved space	☐5
Other_____	☐6

6. Do you normally park in this area? — 24

Yes, most of the time	☐1
Yes, all of the time	☐2
No, today is a special case	☐3

7. What was your first destination after you parked at this location? Please indicate building. _____ — 25, 26, 27

8. Did you or do you plan to park in any other places on campus today? If so, please indicate location(s). _____ — 28, 29, 30, 31, 32, 33

9. Did you: — 34

Walk to your first destination	☐1
Ride the Stinger	☐2
Other_____	☐3

10. Where do you live? On campus ☐ Off campus ☐00 If you live on campus, indicate location_____ — 35, 36

11. How many rode in with you to the campus today? — 37

Just myself	☐0	3 others	☐3
1 other	☐1	4 others	☐4
2 others	☐2	More than 4 others	☐5

12. How many vehicles do you have registered in your name on campus? — 38

0 ☐0 1 ☐1 2 ☐2 3 ☐3 4 ☐4

13. Which planning goal do you consider most important in the development of a comprehensive traffic and parking plan for the campus? — 39

The protection of landscaped, open spaces on the campus (aesthetic values)	☐1
The development of parking areas adjacent to your classroom or place of work	☐2

14. If a good campus transit system (bus, rail, etc.) was established that covered more of the campus than the Stinger does, would you park on the campus fringe and take transit to classes/work? — 40

Yes ☐1 No ☐2

15. What is your overall evaluation of the campus parking facilities? — 41

Excellent ☐1 Good ☐2 Fair ☐3 Poor ☐4

16. In your opinion, what are the major sources of irritation with regard to campus parking? You may check more than one.

☐0	Inequities in the motor vehicle regulations Specify: _____	42
☐0	Enforcement of the motor vehicle regulations Specify: _____	43
☐0	Lack of parking spaces	44
☐0	Excessive walking distances from parking spaces	45
☐0	Lack of short term spaces near Library, Computer Center, etc.	46
☐0	Excessive fees	47
☐0	Inadequate shuttle bus service from perimeter parking spaces	48
☐0	Other _____	49

17. If the complete MARTA bus/train system (with shuttle connections to Georgia Tech) was available today, would you use it to come to school? — 50

☐1	Yes, all of the time
☐2	Yes, some of the time
☐3	No, MARTA would not go near my residence
☐4	No, even though MARTA would be close to my residence I would still drive my car

18. What is your School or Departmental affiliation? _____ — 51, 52

Figure 5. Sample Questionnaire

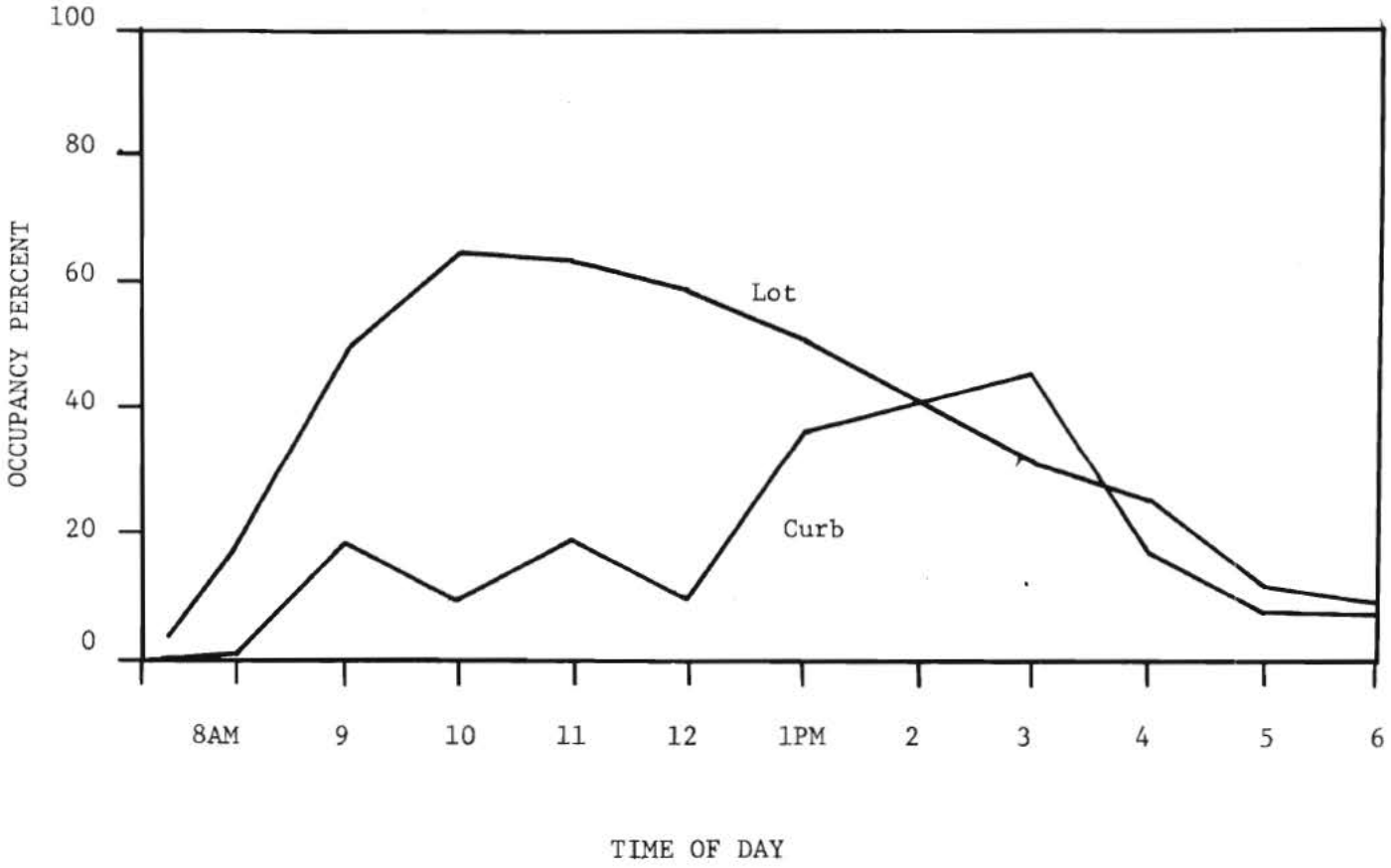


Figure 6.1. Parking Accumulation Curves for the Civil Engineering and Physics Area, Zone 06, for Wednesday, May 24, 1973. Total lot spaces = 472. Total curb spaces = 11.

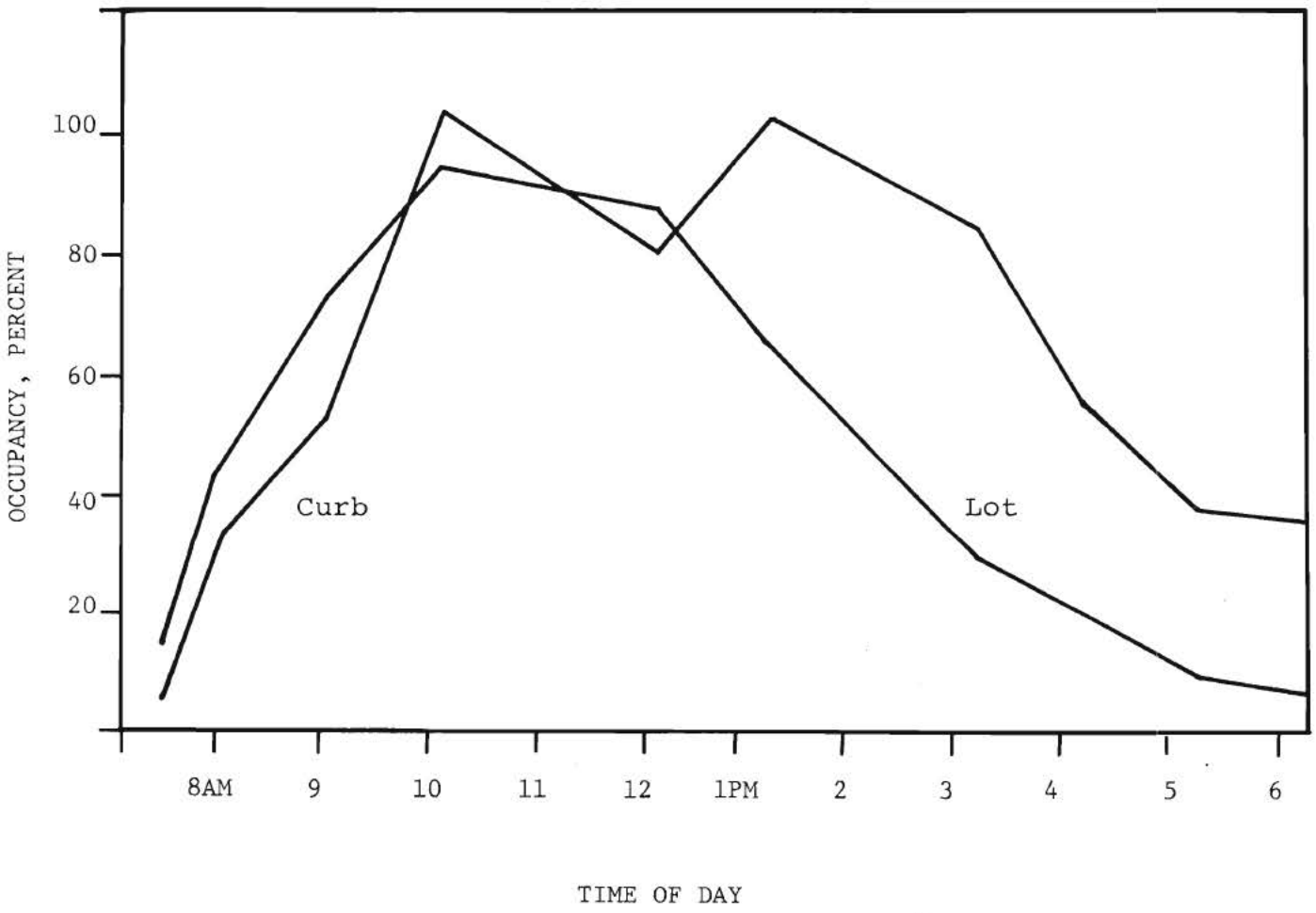


Figure 6.2. Parking Accumulation Curves for the Student Center Area, Zone 09, for Wednesday, May 28, 1973. Total lot spaces = 337. Total curb spaces = 76.

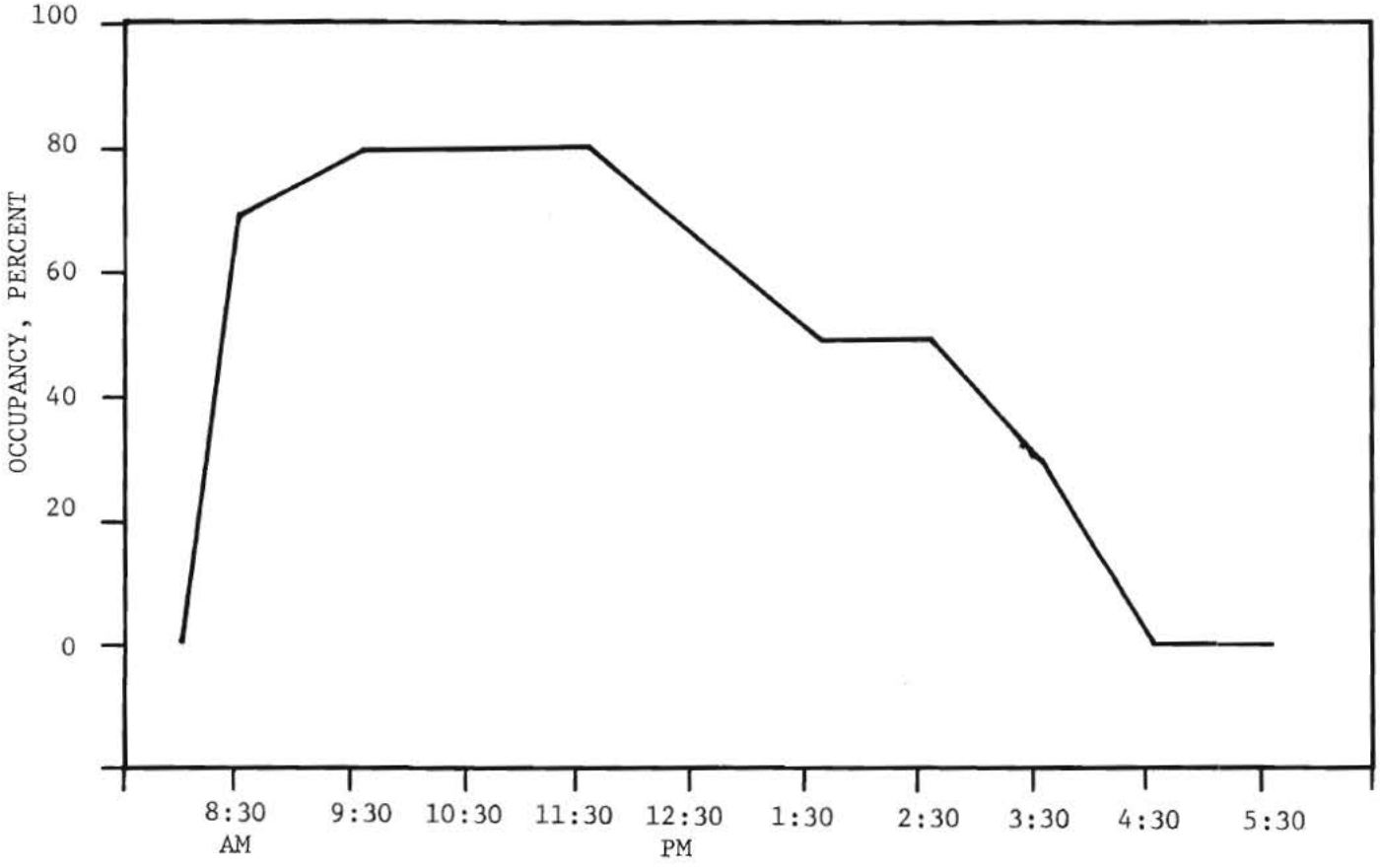


Figure 6.3. Parking Accumulation Curve for the Student Center Area Between the Pay Lot Entrance and the Upper Lot Entrance, Monday, May 14, 1973. Total spaces = 22.

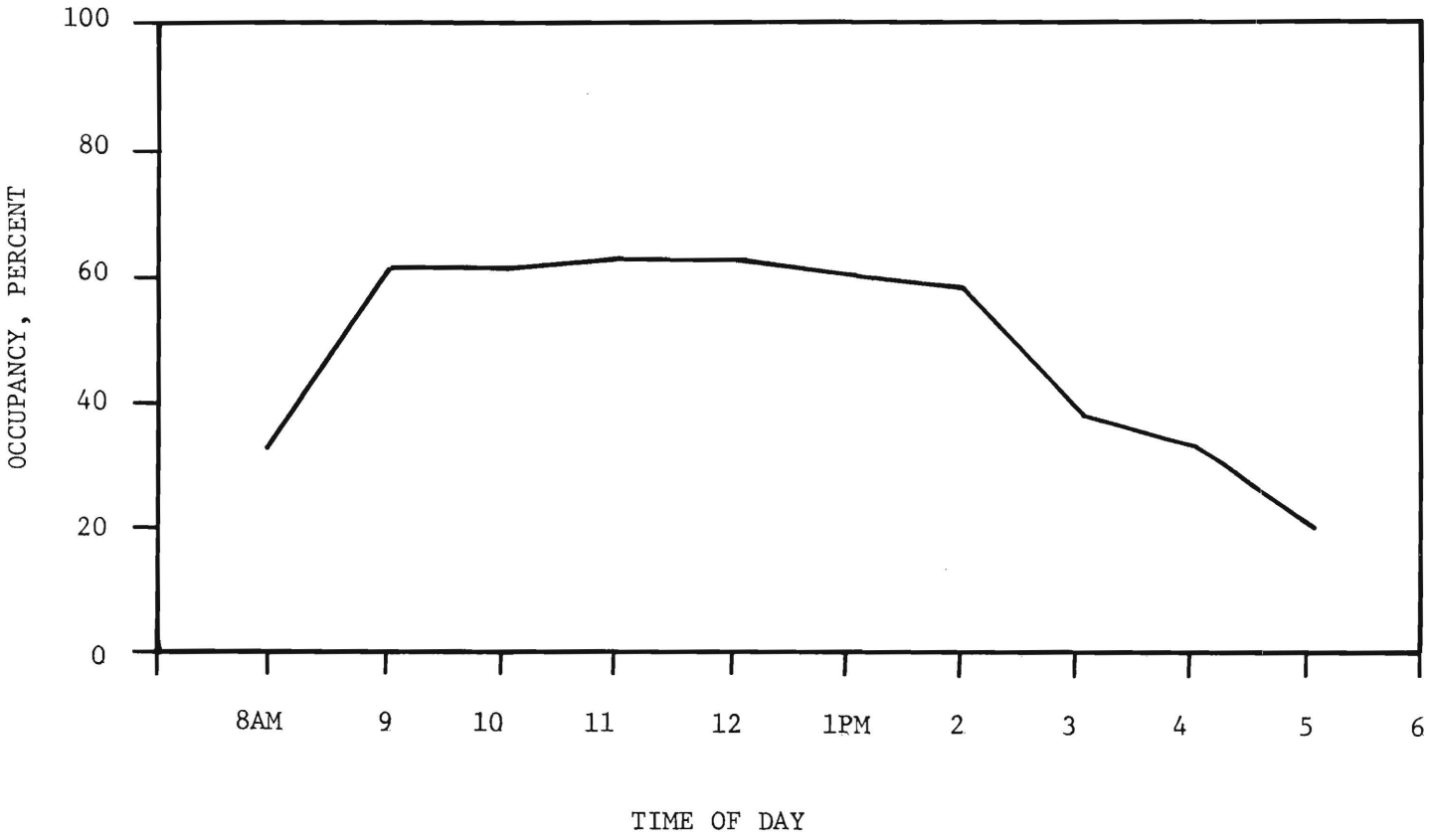


Figure 6.4. Parking Accumulation Curve for the Student Center Pay Lot, Zone 10, Thursday, February 8, 1973. Total spaces = 180.

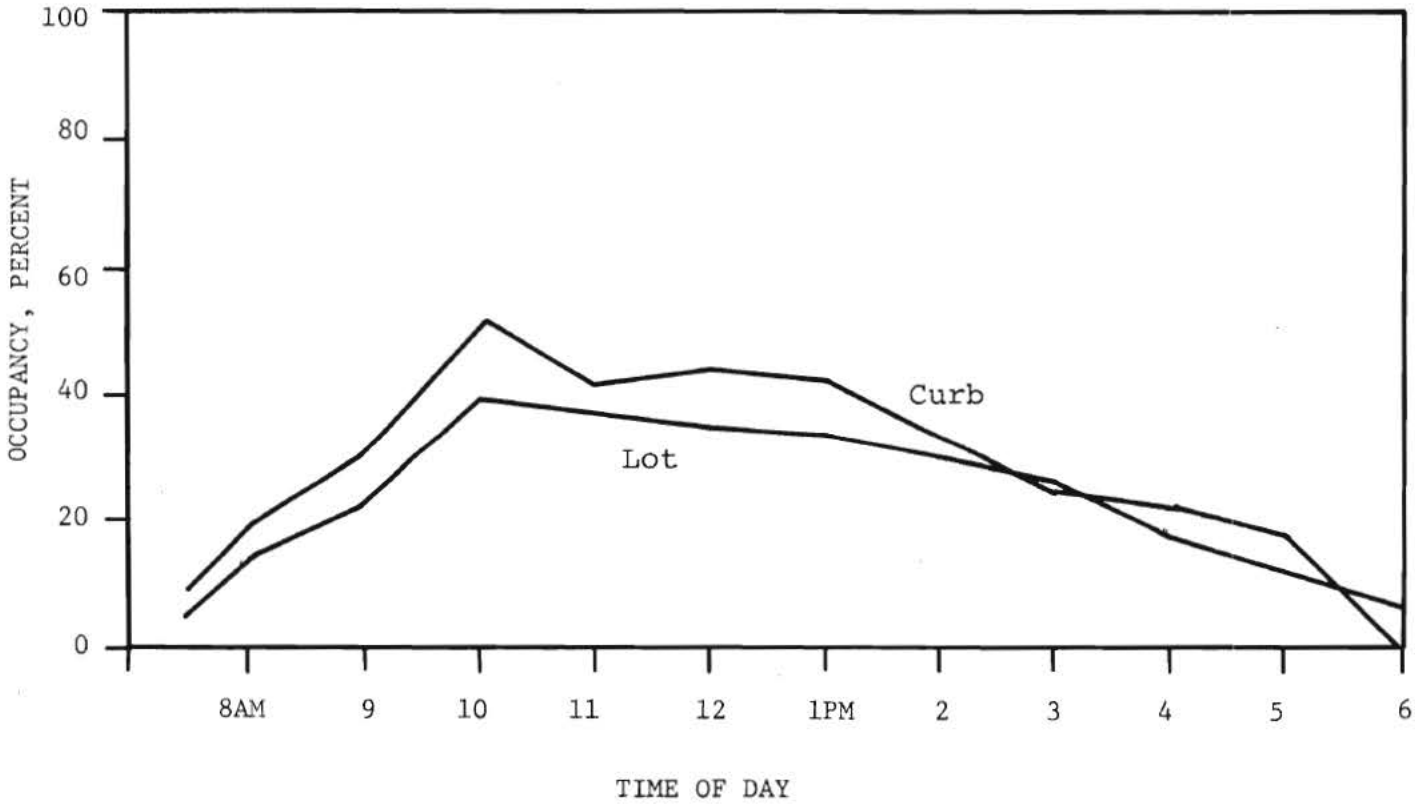


Figure 6.5. Parking Accumulation Curves for the Highway Laboratory Area, Zone 19, for Wednesday, May 23, 1973. Total lot spaces = 147. Total curb spaces = 126.

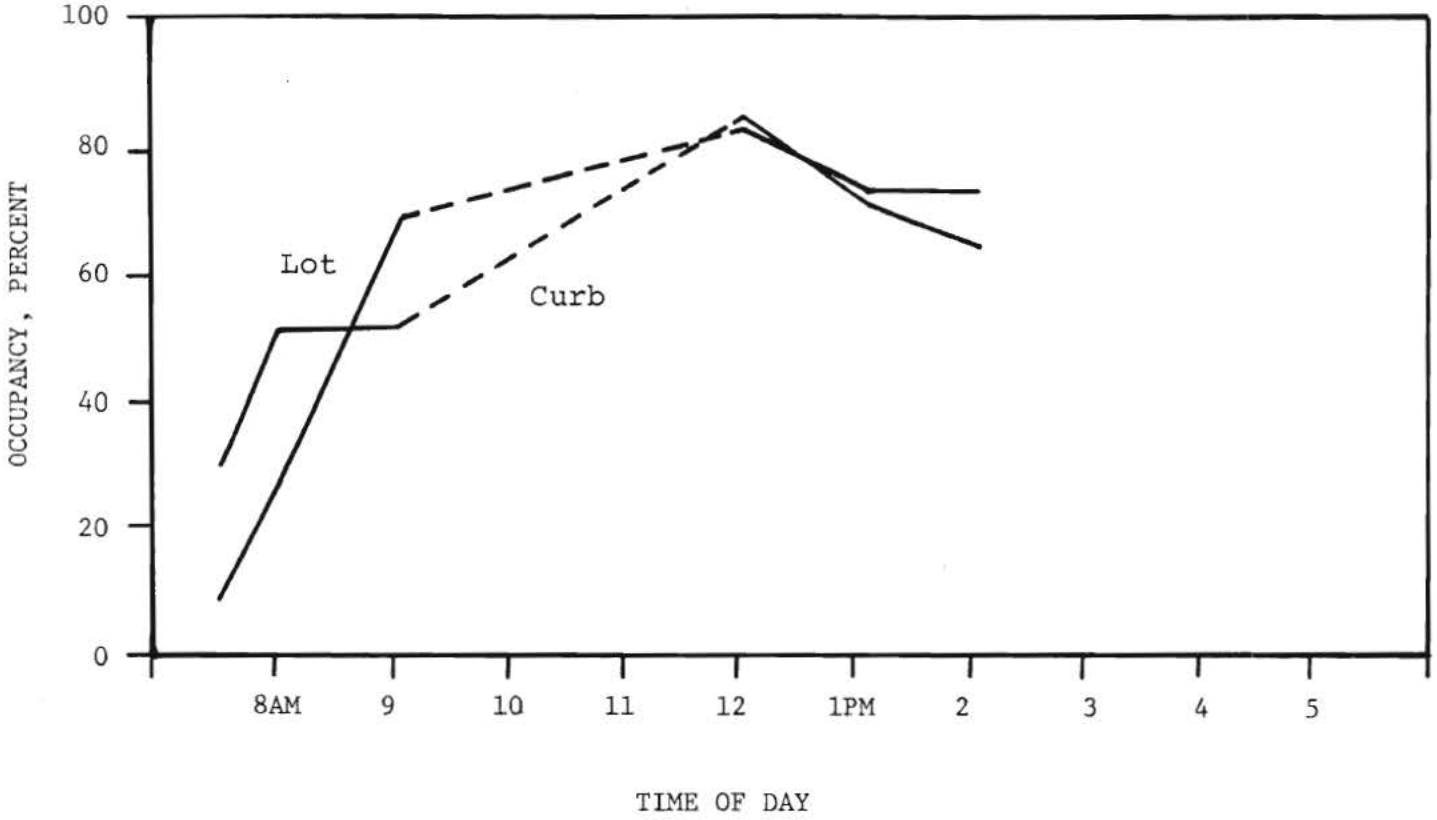


Figure 6.6. Parking Accumulation Curves for the Emerson Building Area, Zone 20, for Monday, May 28, 1973. Total lot spaces = 40. Total curb spaces = 30.

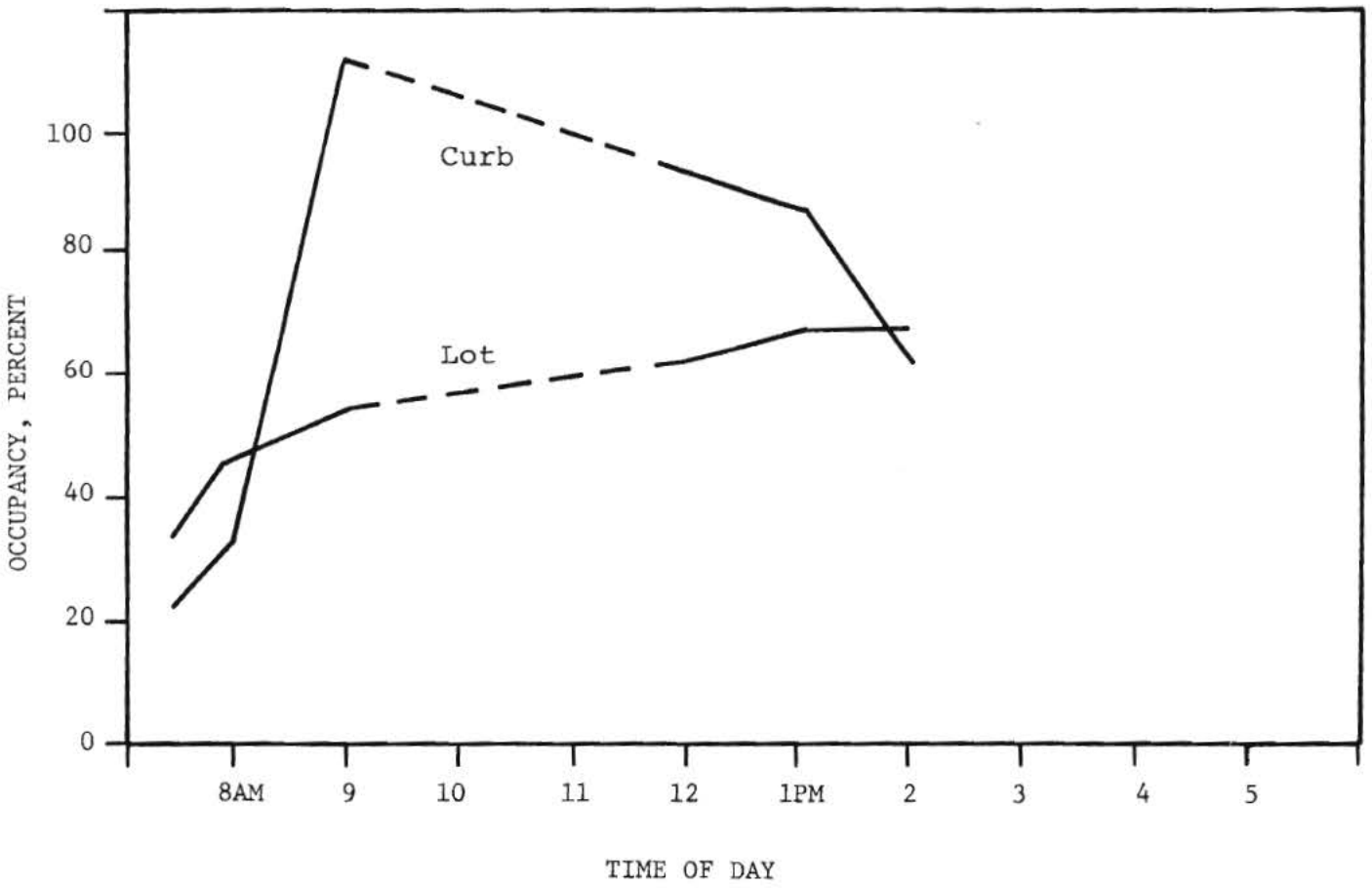


Figure 6.7. Parking Accumulation Curves for the Infirmary Area, Zone 21, for Monday, May 28, 1973. Total lot spaces = 29. Total curb spaces = 54.

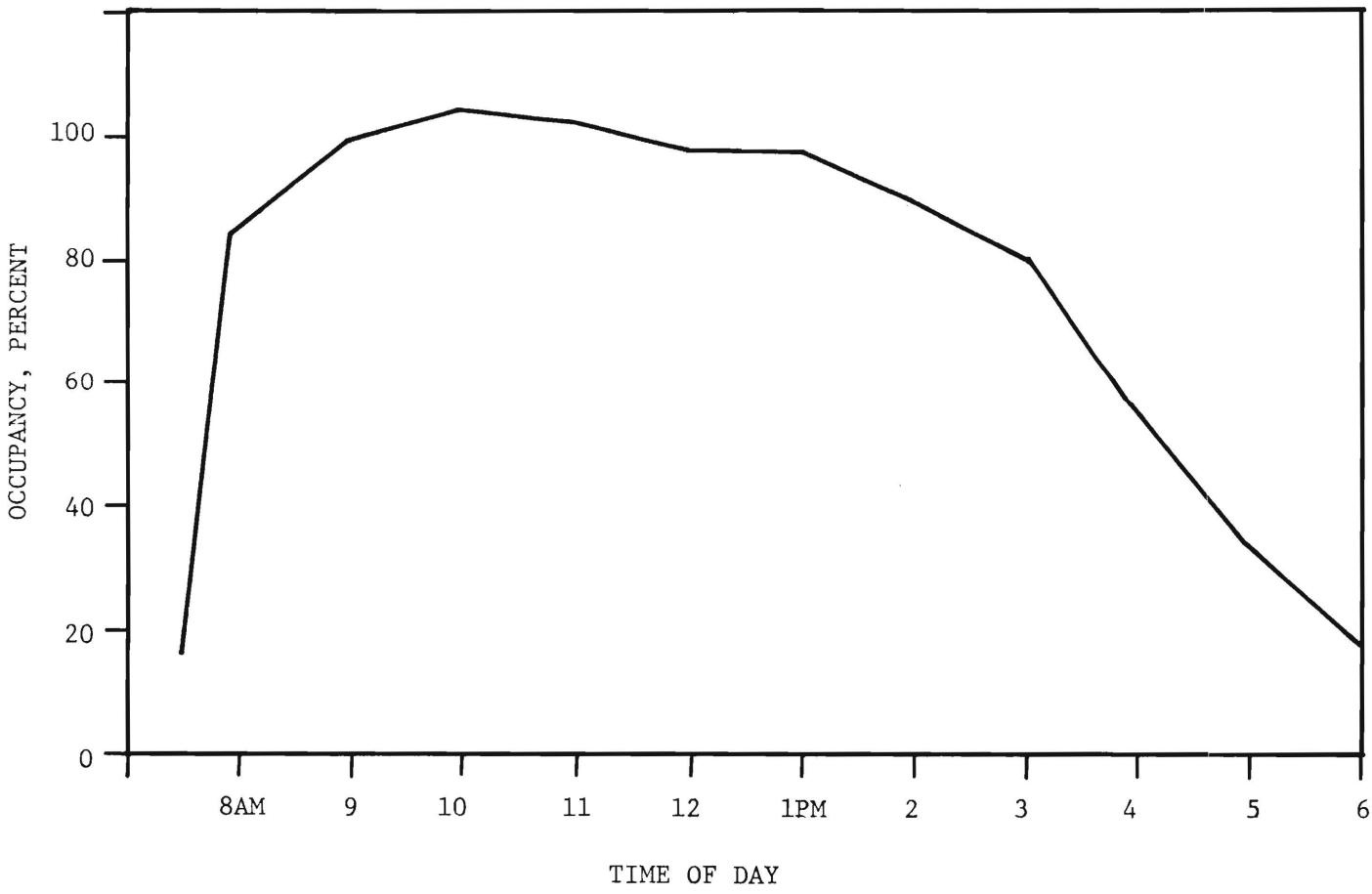


Figure 6.8. Parking Accumulation Curve for the E.E. Lot, Zone 24, for Wednesday, May 2, 1973. Total spaces = 421.

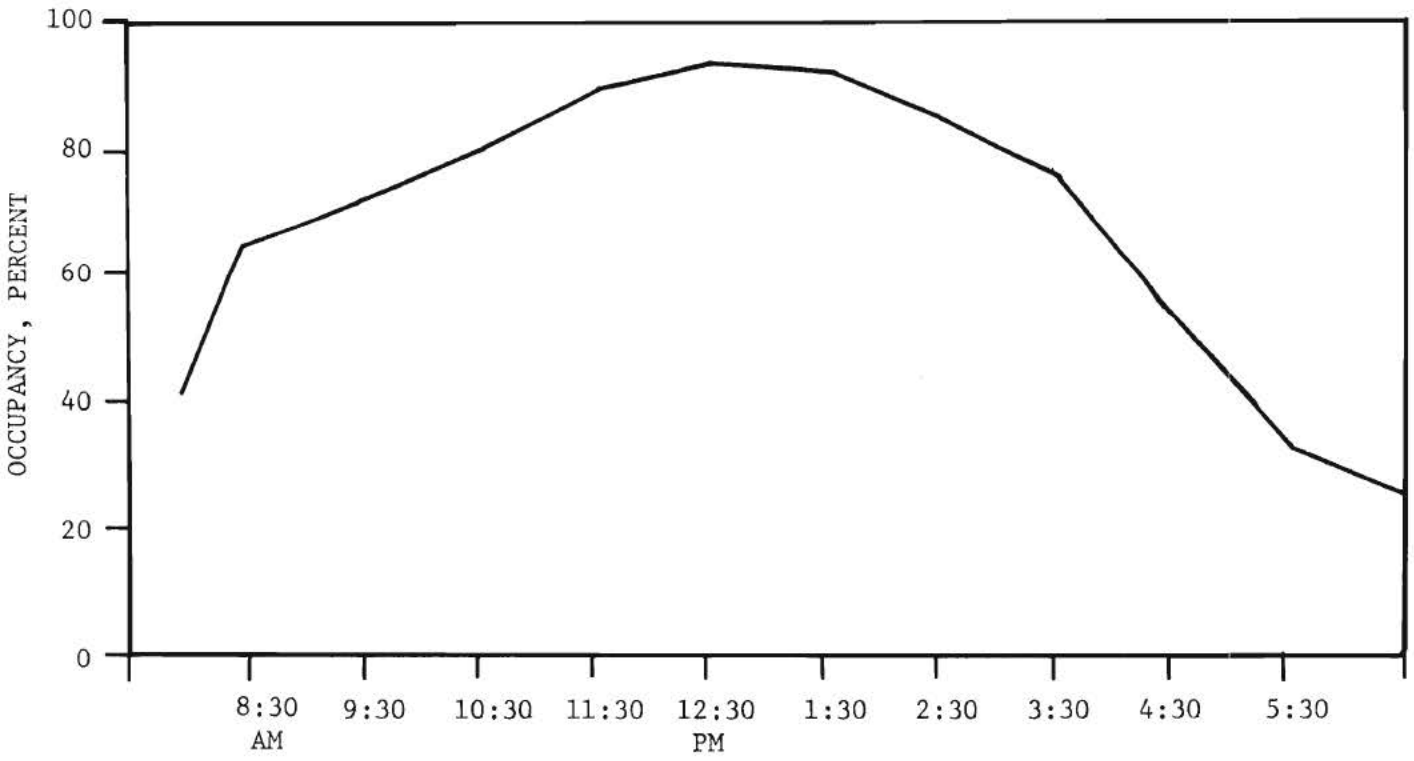


Figure 6.9. Parking Accumulation Curve for the E.E. Lot, Zone 24, for Monday, May 21, 1973. Total spaces = 421.

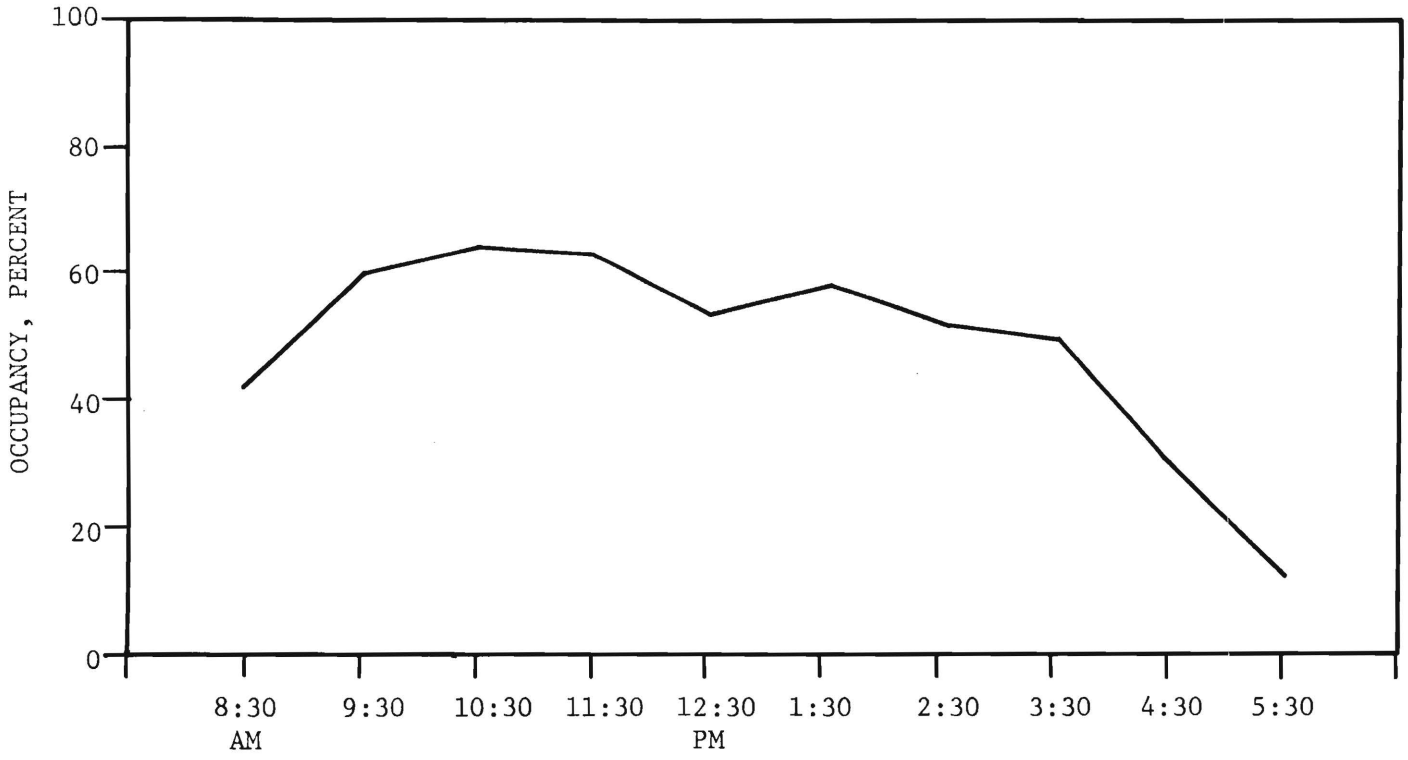


Figure 6.10. Parking Accumulation Curve for the Library Key Lot, Zone 26, for Tuesday, February 6, 1973. Total spaces = 108.

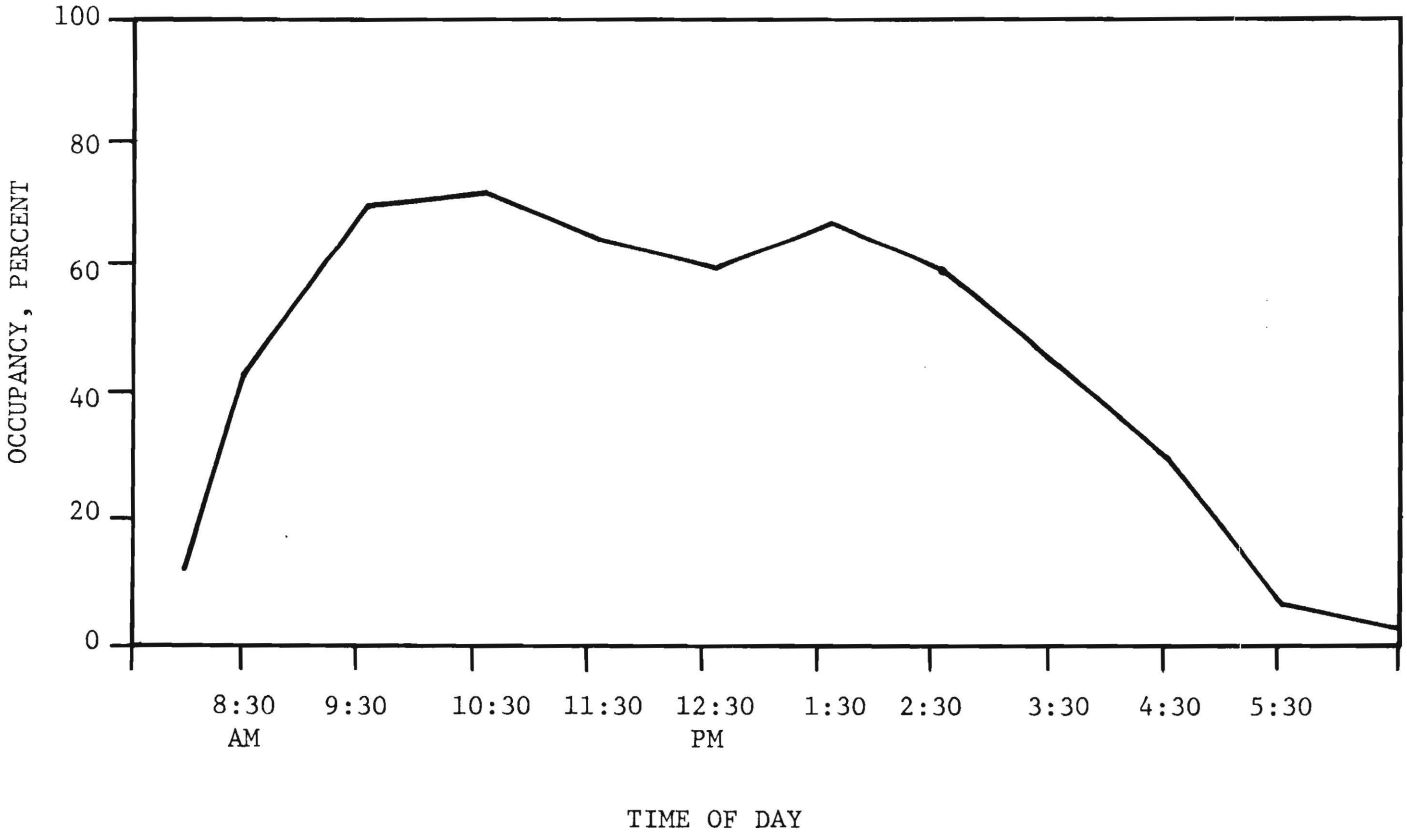


Figure 6.11. Parking Accumulation Curve for the Library Key Lot, Zone 26, for Wednesday, May 2, 1973. Total spaces = 108.

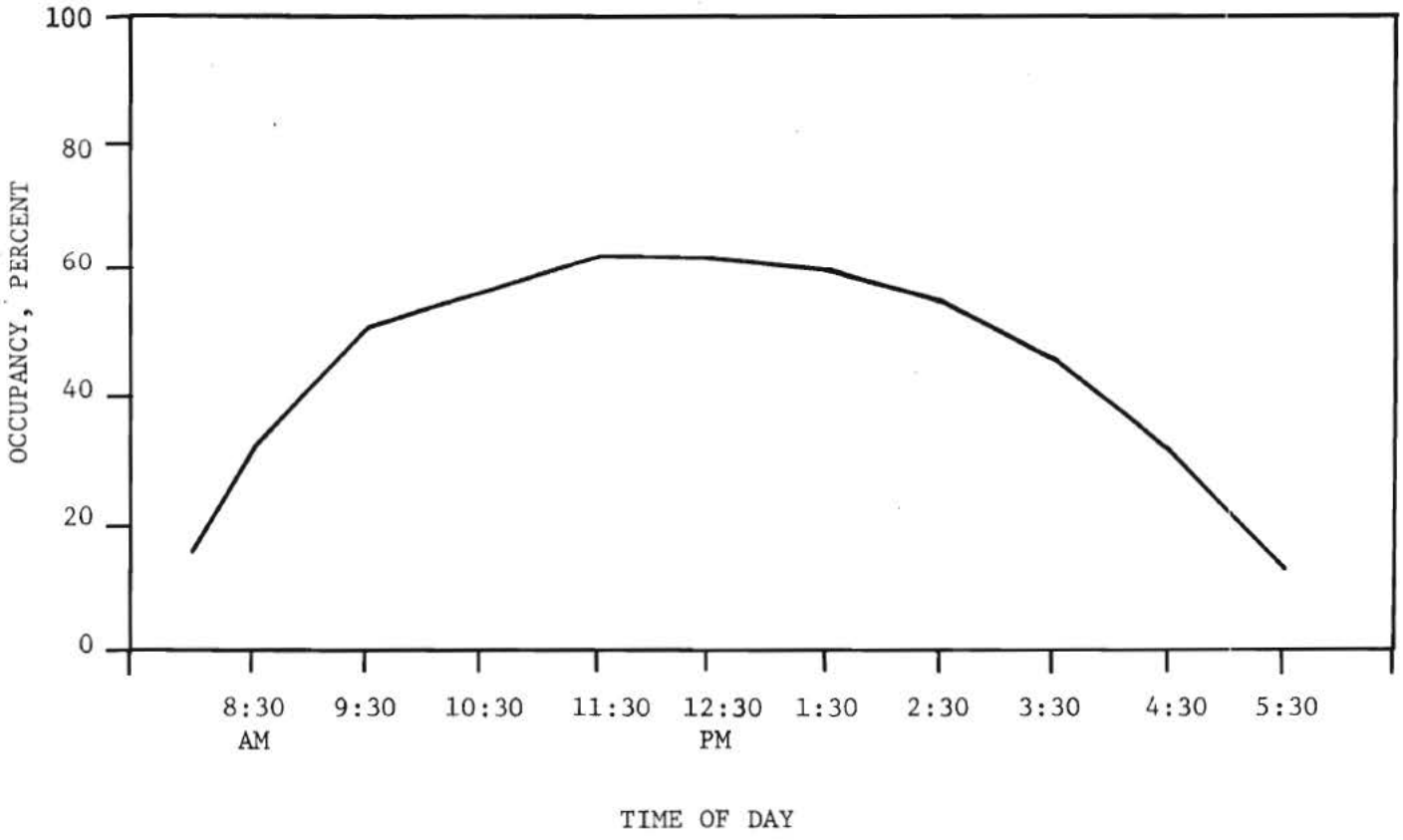


Figure 6.12. Parking Accumulation Curve for the Library Key Lot (Movie Data), Zone 26, for Monday, May 14, 1973. Total spaces = 108.

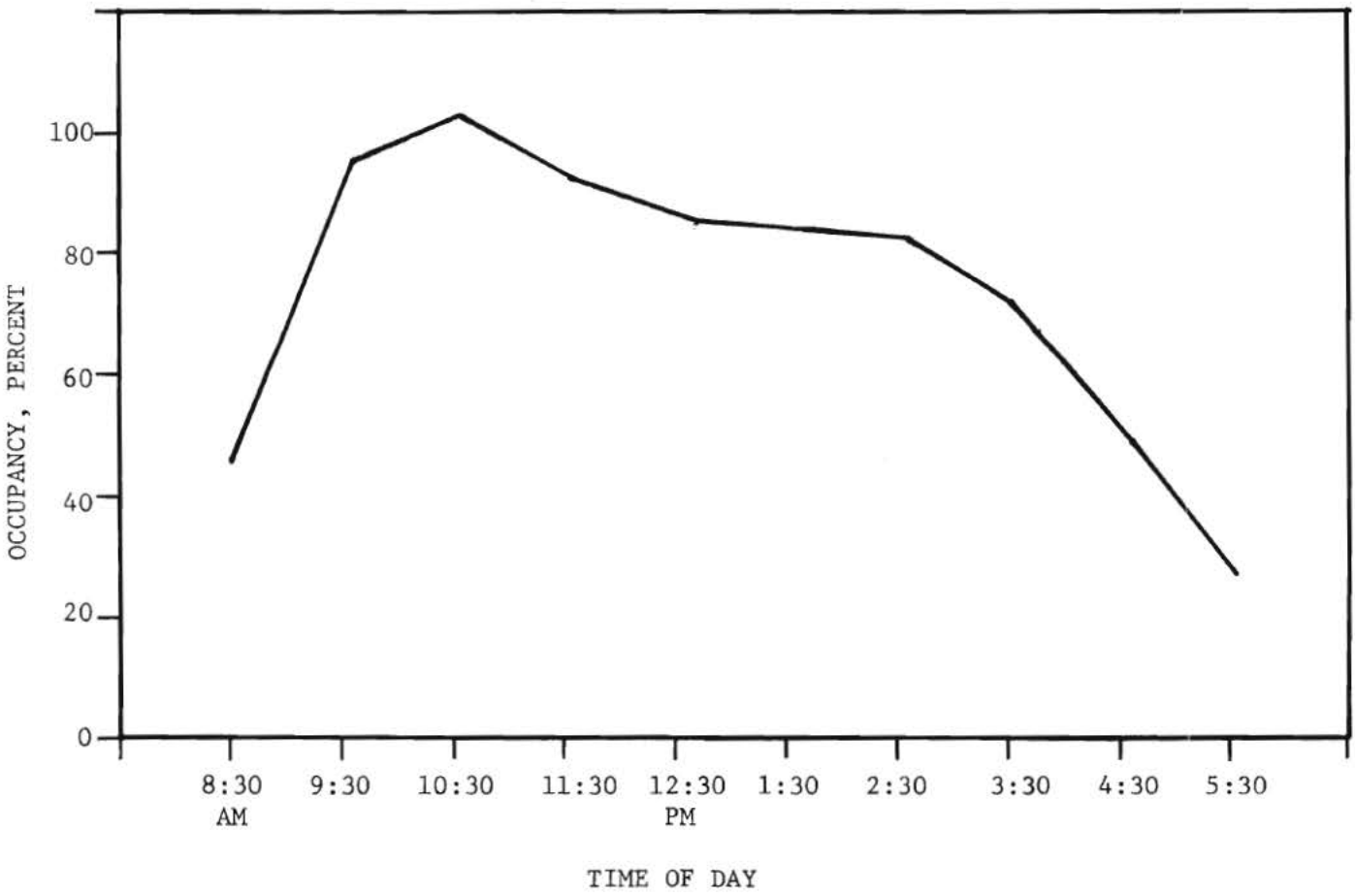


Figure 6.13. Parking Accumulation Curve for the Space Sciences Lot, Zone 28, for Wednesday, February 7, 1973. Total spaces = 96.

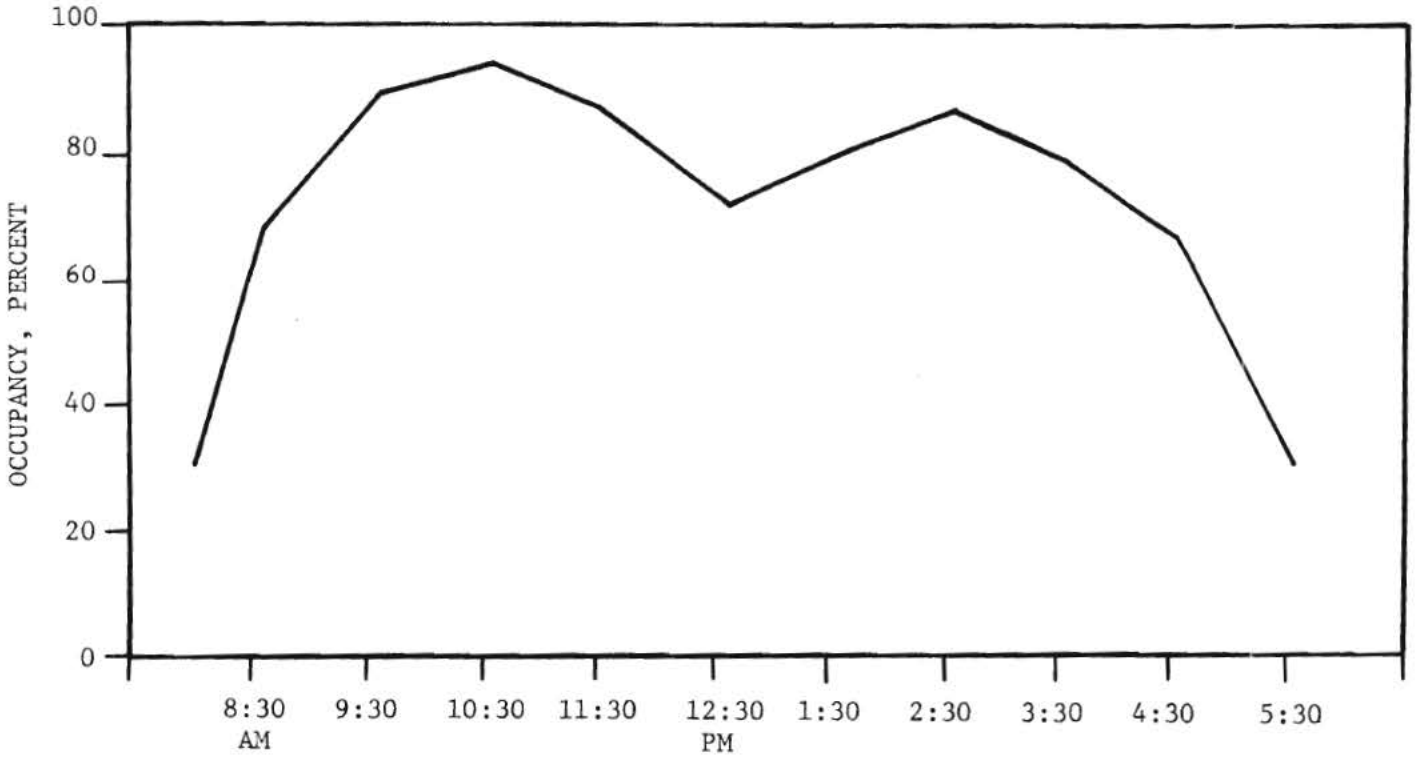


Figure 6.14. Parking Accumulation Curve for the Administration Building Area, Zone 32, for Monday, May 14, 1973. Total spaces = 51.

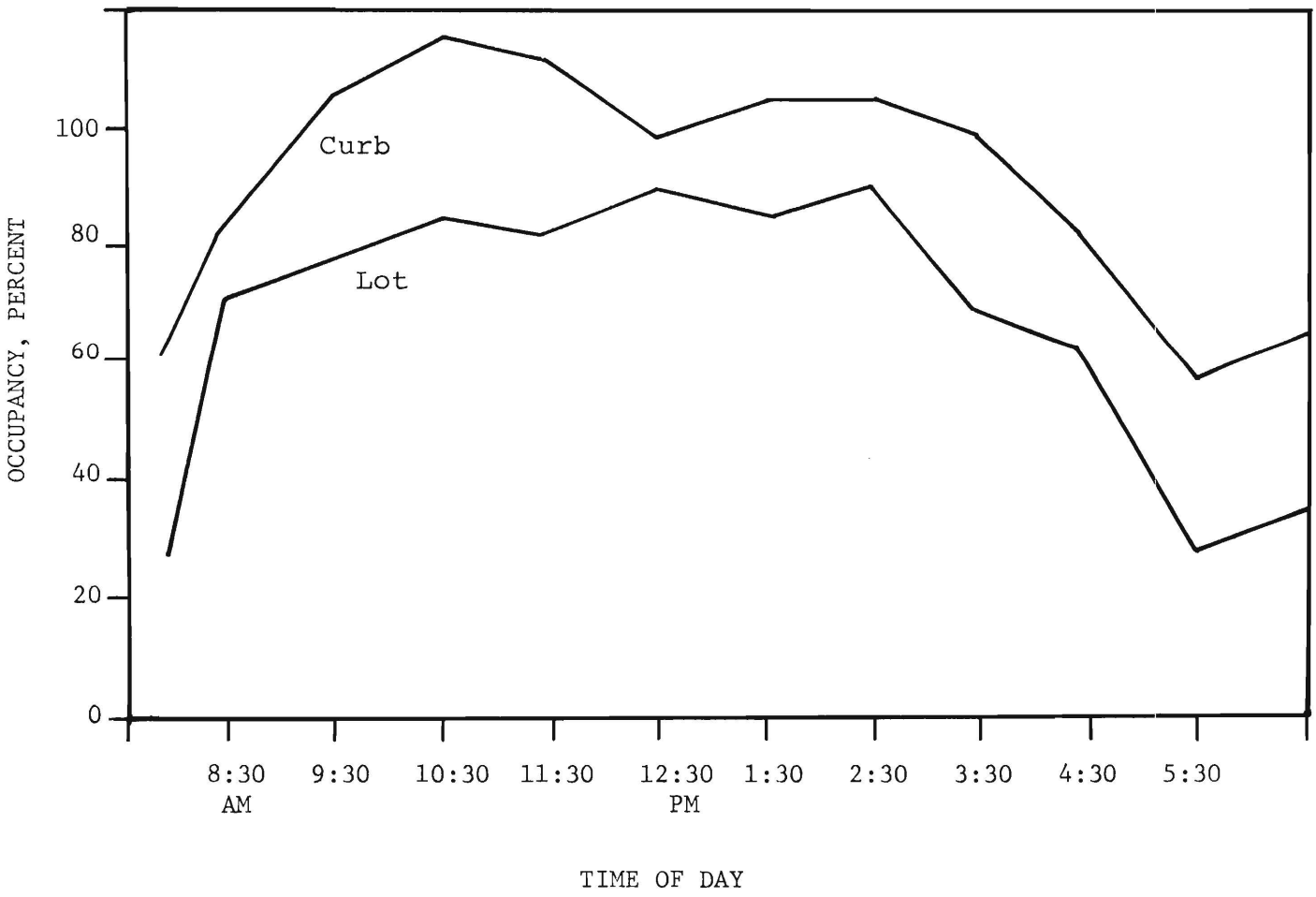


Figure 6.15. Parking Accumulation Curves for the Library/Computer Center Area, Zone 38, for Wednesday, May 2, 1973. Total lot spaces = 66. Total curb spaces = 57.

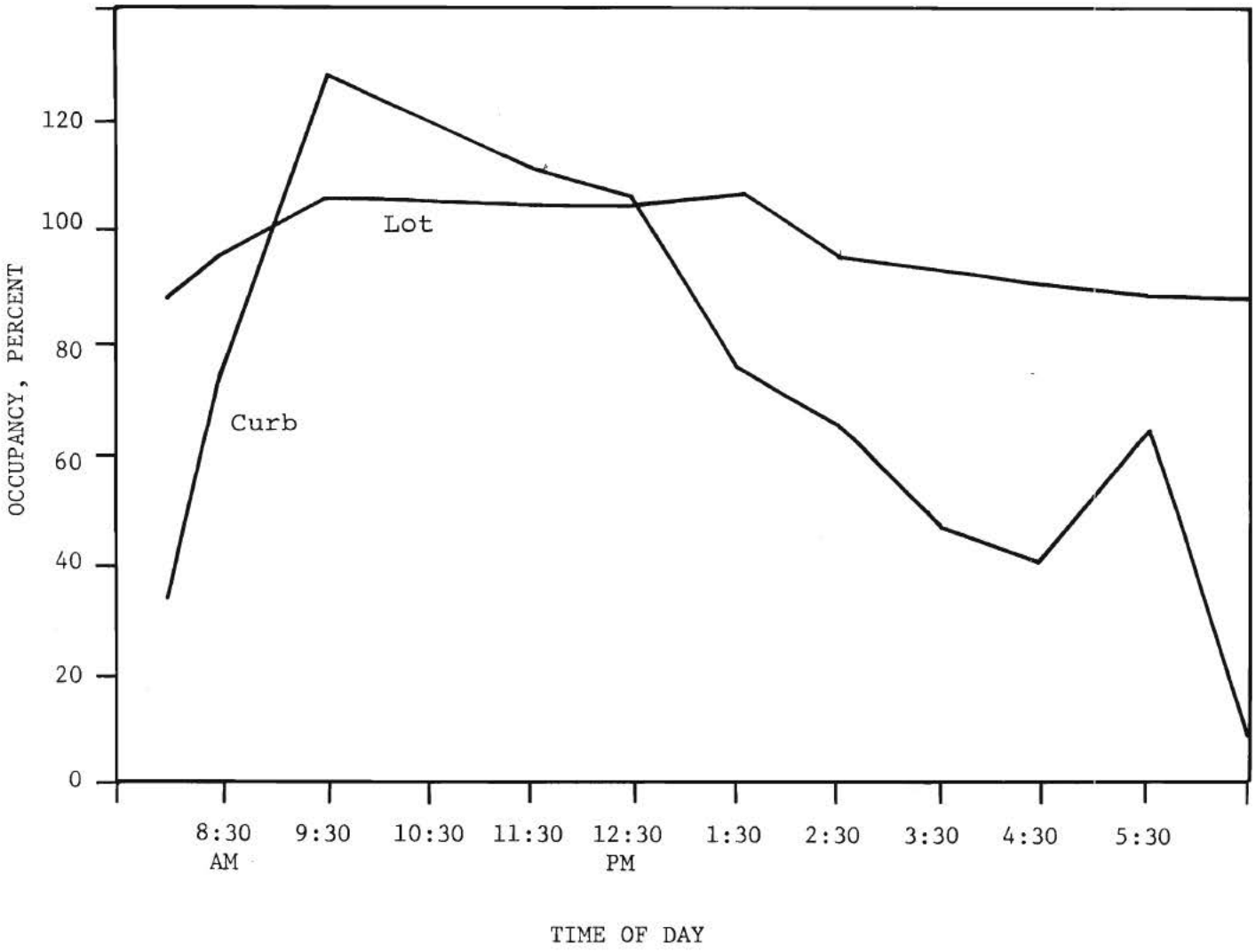


Figure 6.16. Parking Accumulation Curves for the Fifth and Fowler Streets Area, Zone 42, for Wednesday, May 23, 1973. Total lot spaces = 193. Total curb spaces = 17.

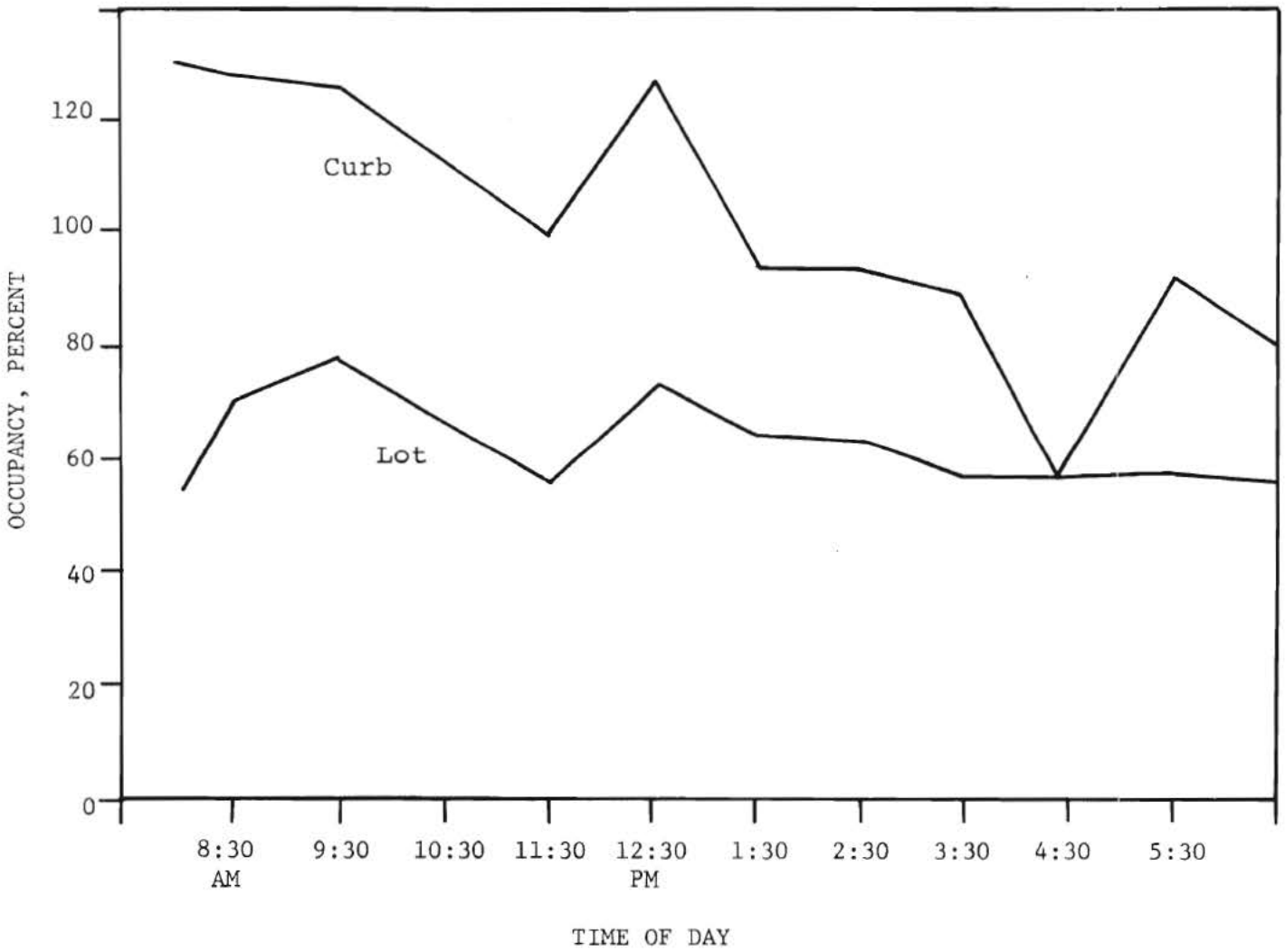


Figure 6.17. Parking Accumulation Curves for the Techwood and Brittain Area, Zone 51, for Wednesday, May 23, 1973. Total lot spaces = 108. Total curb spaces = 72.

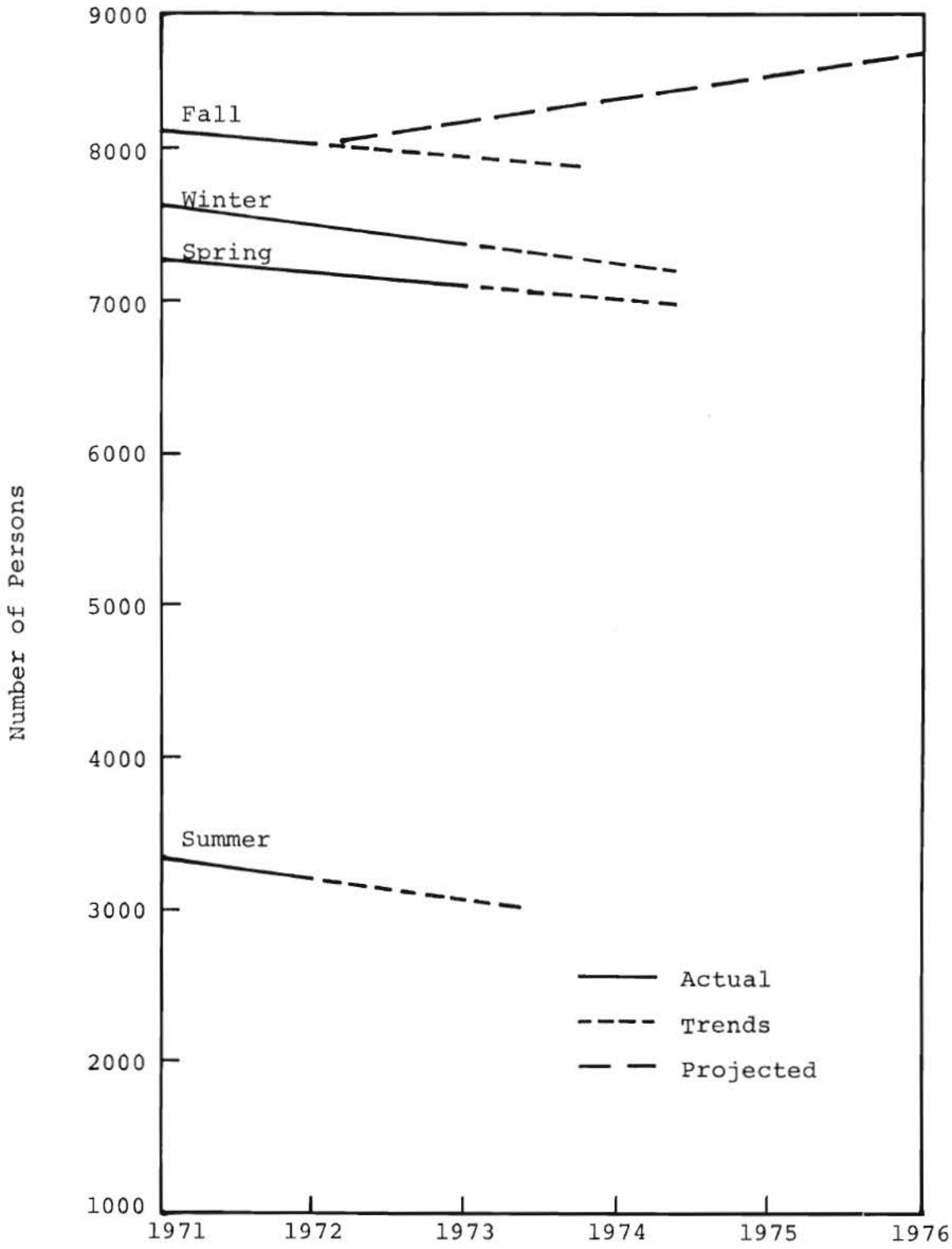


Figure 7. Campus Population Trends

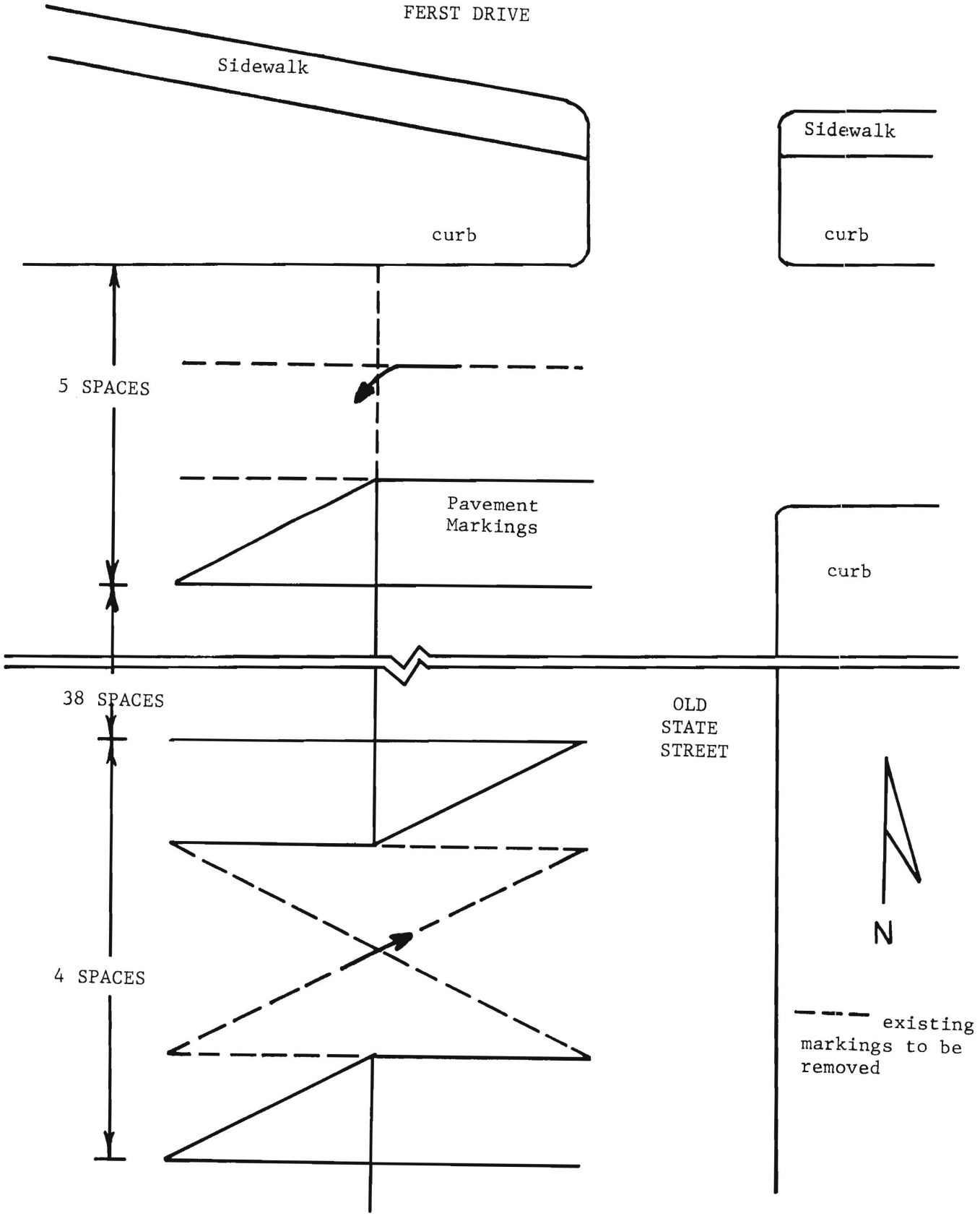


Figure 8. Proposed Zone 6 Entrance Revision

Table 1. Inventory of Spaces by Zone and Questionnaire Return

ZONE	FACULTY/STAFF		CENTRAL		PERIMETER		OTHER		TOTAL	QUESTIONNAIRES		
	LOT	CURB	LOT	CURB	LOT	CURB	LOT	CURB		HANDED OUT	RETURNED NUMBER	RETURNED PERCENT
1		4			194	190			388	239	51	21
2	12								12	7	1	14
3	12						5L		12	11	7	64
4	15				379	10			404	92	33	36
5	30					55			85	23	12	52
6			472	11					483	314	132	42
7	35								35	30	12	40
8									0	0	0	0
9			337	76					413	415	165	40
10					180				180	94	13	14
11									0	0	0	0
12				42			10L	8ST	50	45	9	20
13	60								60	47	20	43
14	122								122	61	36	59
15	157			29			1V		187	75	50	67
16	131					104			235	179	85	47
17					391	29			420	143	11	7
18	16					9	15V		40	37	7	19
19	12	8			135	118	4L		273	108	31	29
20	27	17	13	13			2L		70	54	32	59
21	29			54			3L		83	51	16	31
22	28			36					64	48	13	27
23			32	14					46	53	13	25
24	94		327				2V		423	561	164	29
25									0	0	0	0
26	108								108	75	43	57
27									0	0	0	0
28	96	74					8L		170	170	63	37
29	86						5L		86	50	29	58
30	137				44	10			191	143	15	10
31	33	40							73	54	38	70
32	66	21					3V		90	81	38	47
33	24	43							66	57	24	42
34	24								24	0	0	0
35	11	25					11L		36	59	24	41
36									0	0	0	0
37	44								44	45	23	51
38	76	25		33			2L		134	144	37	26
39	12					66			78	67	7	10
40	19			7					26	20	11	55
41					20				20	0	0	0
42	10				183	17			210	234	44	19
43									0	0	0	0
44									0	0	0	0
45	42				363	35	3L		440	41	8	20

Table 1. Inventory of Spaces by Zone and Questionnaire Return (Cont'd)

ZONE	FACULTY/STAFF		CENTRAL		PERIMETER		OTHER		TOTAL	QUESTIONNAIRES		
	LOT	CURB	LOT	CURB	LOT	CURB	LOT	CURB		HANDED OUT	RETURNED NUMBER	RETURNED PERCENT
46						70			70	33	3	9
47					70	116			186	142	18	13
48					60	35			95	82	16	20
49					82	52	28		162	136	18	13
50						15			15	20	3	15
51	63				45	72			180	161	25	16
52	14				69	56	2V		141	145	36	25
53	94	27					1L		121	88	16	18
54	10				42	189			241	220	47	21
55					123	50			173	163	38	23
56	2				37				39	54	12	22
TOTALS	1725	309	1181	315	2417	1298	59V & ST		7304	5171	1549	30

1496 3715

2034 5211

7245 + 59 = 7304

In addition, there are 54 spaces marked "loading" and approximately forty spaces for motorcycles.

L-loading
V-visitor
ST-short term (15 minutes)

Summary of totals:

Faculty/staff lot 1725
Faculty/staff curb 309
Central campus student lot 1181
Central campus student curb 315
Perimeter student lot 2417
Perimeter student curb 1298
Visitor and short term 59
Total faculty/staff spaces 2034
Total central campus spaces 1496
Total perimeter spaces 3715
Total student spaces 5211
Total curb spaces 1922
Total lot spaces.....5382
Total of all spaces on campus ...7304

The inventory was conducted on 14 May 1973 and updated on 24 July 1973.

Table 2. Parking Accumulation of Major Campus Facilities

Spring Quarter, 1973

NUMBER/PERCENTAGE OF SPACES OCCUPIED BETWEEN THE HOURS OF:

FACILITY/ ZONE	DATE/ DAY	SPACES AVAIL.	Before 8:00am	8:00- 9:00am	9:00- 10:00am	10:00- 11:00am	11:00- 12:00n	12:00- 1:00pm	1:00- 2:00pm	2:00- 3:00pm	3:00- 4:00pm	4:00- 5:00pm	5:00- 6:00pm	After 6:00pm
CE,Physics, Grad. Lots/ 06;student	23 May/ Wed.	Lot:472 Curb:11	16/ 3%	82/17% 0/ 0%	238/50% 2/18%	305/64% 1/ 9%	295/62% 2/18%	273/58% 1/9%	241/51% 4/36%	- -	145/31% 5/45%	119/25% 2/18%	58/12% 1/ 9%	47/12% 1/ 9%
Student Center Curb Only/09 faculty, student	14 May Mon.	Curb:22	5/22	20/91	22/100	22/100	22/100	19/86	16/72	16/72	12/54	5/22	5/22	-
Student Center Lot/09,faculty student	28 May Mon.	Lot:337 Curb:76	50/15 4/ 5	112/33 27/35	251/74 42/55	324/96 80/105	- -	297/88 61/80	232/68 81/106	175/52 73/96	112/33 65/85	74/22 43/56	33/10 29/38	20/ 6 28/37
Student Center Pay Lot/10 faculty,student	8 Feb. Thurs.	Lot:180	-	63/35	113/63	113/63	115/63	115/64	111/62	108/60	75/42	63/35	40/22	-
Hwy. Lab./19 faculty,student	23 May	Lot:147 Curb:126	9/ 6 11/ 9	22/15 26/20	34/23 40/32	61/41 68/42	58/39 54/43	55/37 58/46	53/36 56/44	- -	42/28 32/45	30/20 30/24	20/14 25/20	13/ 9 4/ 3
Emerson Bldg./ 20, student, faculty	28 May Mon.	Lot:40 Curb:30	3/ 8 9/30	11/27 16/53	28/70 16/53	- -	- -	34/85 26/87	30/75 22/73	30/75 20/63	- -	- -	- -	- -
Infirmary/21 student,faculty	28 May Mon.	Lot:29 Curb:54	10/34 12/22	13/45 18/33	16/55 60/111	- -	- -	18/62 51/94	20/69 48/88	20/69 33/61	- -	- -	- -	- -
EE Lot/24 student,faculty	2 May Wed.	Lot:421	77/18	355/84	420/99	439/104	433/103	415/98	413/98	379/90	340/81	247/58	140/33	76/18
EE Lot/24 student,faculty	21 May Mon.	Lot:421	185/44	281/66	310/73	344/81	382/90	405/95	399/94	370/87	333/78	238/56	154/36	120/28
Library Card Lot/26 faculty	6 Feb. Tues.	Lot:108	-	46/42	65/60	70/65	68/63	59/55	64/59	60/56	58/53	36/33	17/15	-
Library Card Lot/26 faculty	2 May Wed.	Lot:108	15/14	46/42	75/69	78/72	72/66	68/63	77/71	68/63	53/49	38/35	12/11	10/ 9
Library Card Lot (movie)/26 faculty	14 May Mon.	Lot:108	20/18	35/32	55/51	62/57	68/63	68/23	66/61	62/57	52/48	35/32	15/14	-
Space Science Lot/28,faculty	7 Feb. Wed.	Lot:96 Curb:100	-	45/46	91/94	97/101	89/92	83/87	83/87	82/85	72/75	50/52	28/29	-
Admin. Bldg. Area/32 faculty	14 May Mon.	Lot:51	16/31	35/68	46/90	48/94	45/88	38/74	43/84	46/90	42/82	36/70	18/35	-
Library, Comp. Center/38 faculty,student	2 May Wed.	Lot:66 Curb:57	18/27 35/61	47/71 47/82	52/78 60/105	56/84 66/115	54/81 64/112	58/87 56/98	56/84 60/105	58/87 60/105	46/69 56/98	40/60 52/91	19/28 33/58	23/34 36/63
5th & Fowler /42 student	23 May Wed.	Lot:193 Curb:17	167/87 6/35	185/96 12/71	203/105 24/141	- -	199/103 19/111	198/102 18/105	201/104 13/76	184/95 11/65	182/94 8/47	176/91 7/41	170/88 11/65	170/88 2/12
Techwood & Brittain/51 student,faculty private	23 May Wed.	Lot:108 Curb:72	57/53 94/130	76/70 92/127	84/78 91/126	- -	61/56 71/98	81/75 91/126	70/65 67/93	68/63 67/93	62/57 65/90	55/57 41/57	63/58 68/94	62/57 59/82

Table 3. Questionnaire Results By Classification of Respondent

	FACULTY AND STAFF	OTHER EMPLOYEE	VISITOR	GRADUATE STUDENT AND TEACHING ASSISTANTS	SENIOR	JUNIOR	SOPHOMORE	FRESHMAN	SPECIAL STUDENT AND OTHER
Hours	Duration of parking for the listed number of hours:								
1	0	2	0	1	9	13	4	1	1
2	5	1	3	3	14	11	7	4	0
3	3	2	4	13	25	9	8	3	1
4	5	0	1	14	11	17	22	11	2
5	7	4	1	10	25	11	28	9	0
6	11	3	1	11	32	13	12	11	3
7	24	2	0	10	22	25	13	15	2
8	40	14	3	28	27	29	10	4	1
9	94	74	0	35	14	19	12	5	10
10	114	75	0	31	11	14	7	6	8
over 10	65	23	3	51	47	48	36	31	5
No.	How many rode in with you to the campus today?								
0	352	189	10	179	206	185	148	91	31
1	45	18	5	22	17	14	8	4	0
2	2	3	0	0	3	3	0	1	0
3	0	0	1	0	1	0	0	0	0
4	0	0	0	0	0	0	1	0	0
5	1	0	0	1	0	1	0	0	0
No.	How many vehicles do you have registered in your name on campus?								
0	8	7	12	5	13	11	9	18	4
1	137	117	4	145	191	183	161	75	23
2	228	83	0	55	34	14	18	7	6
3	1	3	0	1	0	0	1	0	0
4	0	0	0	0	0	0	0	0	0

Table 3. Questionnaire Results By Classification of Respondent (Cont'd)

	FACULTY AND STAFF	OTHER EMPLOYEE	VISITOR	GRADUATE STUDENT AND TEACHING ASSISTANTS	SENIOR	JUNIOR	SOPHOMORE	FRESHMAN	SPECIAL STUDENT AND OTHER
Which planning goal do you consider most important in the development of a comprehensive traffic and parking plan for the campus?									
. . .The protection of landscaped, open spaces (aesthetic values)	201	103	5	128	170	140	130	79	25
. . .The development of parking areas adjacent to your classroom or place of work	151	98	7	68	64	65	44	21	7
If a good campus transit system (bus, rail, etc.) was established that covered more of the campus than the Stinger does, would you park on the campus fringe and take transit to classes/work?									
Yes:	116	69	6	104	155	134	103	63	12
No:	236	134	5	98	75	73	54	36	19
What is your overall evaluation of the campus parking facilities?									
Excellent:	26	6	0	5	4	1	1	0	0
Good:	123	56	5	68	45	31	28	20	8
Fair:	161	103	4	99	128	93	83	41	17
Poor:	51	46	4	32	59	84	49	37	8

Table 3. Questionnaire Results By Classification of Respondent (Cont'd)

FACULTY AND STAFF	OTHER EMPLOYEE	VISITOR	GRADUATE STUDENT AND TEACHING ASSISTANTS	SENIOR	JUNIOR	SOPHOMORE	FRESHMAN	SPECIAL STUDENT AND OTHER
In your opinion, what are the major sources of irritation with regard to campus parking?								
. . . .Inequities in the motor vehicle regulations								
23	18	2	20	27	24	15	14	2
. . .Enforcement of the motor vehicle regulations								
69	45	1	46	56	44	31	18	6
. . .Lack of parking spaces								
127	109	9	91	136	132	102	74	13
. . .Excessive walking distances from parking distances								
34	26	6	36	46	69	59	34	6
. . .Lack of short term spaces near the Library, Computer Center, etc.								
153	76	3	99	122	91	68	37	7
. . .Excessive fees								
81	35	3	42	72	58	38	27	10
. . .Inadequate shuttle bus service from perimeter parking spaces								
24	12	2	39	47	45	42	25	7
. . .Other								
48	27	3	42	41	35	21	6	6

Table 3. Questionnaire Results By Classification of Respondent (Cont'd)

	FACULTY AND STAFF	OTHER EMPLOYEE	VISITOR	GRADUATE STUDENT AND TEACHING ASSISTANTS	SENIOR	JUNIOR	SOPHOMORE	FRESHMAN	SPECIAL STUDENT AND OTHER
If the complete MARTA bus/train system (with shuttle connections to Georgia Tech) was available today, would you use it to come to school?									
. . .Yes, all of the time	66	23	1	33	44	39	23	10	7
. . .Yes, some of the time	130	69	4	67	71	57	40	29	8
. . .No. MARTA would not go near my residence	132	81	3	72	76	61	55	35	8
. . .No, even though MARTA would come close, I would not use it	37	33	2	26	34	25	19	12	7

Table 4a. Questionnaire Results by Traffic Zone--Employment/Classification.

Zone	Faculty	Other Employee	Visitor	Grad. Student	Senior	Junior	Sophomore	Freshman	Other
1		1	1	12	10	20	5	1	1
2		1							
3	1	5							
4	13	6		4	4	4	3		
5	8	3							1
6		3	2	37	19	8	8	3	
7	8			1					
9	2	1	2	21	42	30	38	29	
10			3		2	1	2	3	2
12			1		2	3	1		1
13	11	1		3	1	1	1	2	
14	26	4	1	3			1		1
15	30	6		7	1	1	3		1
16	30	40	1	5	1	2	1		2
17				3	3	4	1		
18	2	3				2			
19	3				8	4	4		2
20	15	6		1		2	7	1	
21	1	4		3	1	3	3		1
22				5	6	1	1		
23	5	1		1	2	1	2		
24	26	7		32	43	27	12	7	1
26	41	3							
28	31	16		3	9	3	2		
29	2	2		21	2			1	

Zone	Faculty	Other Employee	Visitor	Grad. Student	Senior	Junior	Sophomore	Freshman	Other
30	2	6		2	3			1	
31	17	22							
32	13	21		1		1			2
33	18	5				1			
35	19	2		1		1			
37	10	6		1	1	2	1		
38	19	9		2	3	2	2		
39						4	1	2	
40	7	4							
42	5			1	8	17	10	3	
45	2	1				1	1		2
46		1						1	1
47				1	6	7	3	2	
48					6	5	2		2
49			1	1	6	7	2	2	
50					1		1	1	
51	2	1			16	11	2	2	1
52	1	1			7	2	5	1	2
53	5	5	1		1	1		2	
54	2		2		7	9	15	11	1
55	2		2		7	9	15	11	1
56				1		7	2	2	

Table 4b. Questionnaire Results by Traffic Zones--Duration of Parking, Hours.

Zone	Under 1 Hour	1	2	3	4	5	6	7	8	9	10	Over 10 Hours
1	1	4	4	4		4	1	5	5	5	1	17
2										1		
3									1		5	
4		2	2	1		2	7	2	3	1	9	11
5							1			3	2	6
6		1		5	8	8	8	6	10	8	11	10
7					1	1				1	6	4
9		3	13	23	22	19	13	20	15	19	14	6
10			1	4	1		2	1	1	3		
12			1	1		2		2		1		2
13			2	2	1	1		1		6	6	1
14				2	1	1		3	3	11	9	5
15			1			4		2		7	24	12
16				2	1	2	1		6	44	20	10
17			1		1		1		1			7
18							1	1		5		
19				3	1	5	7	2	5	1	3	2
20		1	4	2		1		1	3	7	6	7
21					1		2	2	1	1	3	4
22		1			1	2		2	4	2	1	
23				1	1		1	1	2	2	1	4
24		1	2	10	13	20	14	19	17	14	20	22
26						1	4	5	9	14	8	2
28		2	1	1	1	3	3	4	5	19	16	6
29			1	2			1	3	7	7	5	2
30			1			2		1	1	1	5	3
31						1	2		1	16	15	4

Zone	Under 1 Hour	1	2	3	4	5	6	7	8	9	10	Over 10 Hours
32										6	24	6
33								6	5	3	3	2
35						1	1	4	6	7		4
37				1			1		5	8	1	6
38				2	3	2	4	3	2	13	5	3
39		1	1					1	1			3
40		1								2	4	4
42		2	1	1	3	1	2	6	4	38	3	11
45		1	2								4	
46						1				1	1	
47			2	1		1	1			1	2	11
48					1				1		2	11
49		1	1	1			5	2			1	6
50							1				1	1
51		4	1		1	1		1			5	10
52		1			1	2	4	1	2		1	11
53		1				1		2	3	1	3	5
54			1		8	3	3	2	2	2	1	25
55			1	1	4	2	2	1	4		1	22
56		1	1					2				7

Table 4c. Questionnaire Results by Traffic Zones--
Question 5: "Why Did You Park in this Spot Today?"

Zone	Closest to Destination	Only Spot I Could Find	Closest to Dorm or Frat./Sor. House	Going to Bookstore or Student Center	Use Reserved Space	Other
1	9	8	33		2	
2	1					
3	1	2				1
4	18	8	7		1	1
5	1					
6	45	8				12
7	12					
9	95	21	1	20		14
10	9			3		1
12	4	1		3	1	
13	17	2				1
14	30	1		1		3
15	45	1			2	2
16	76	1	4			3
17	5		5			1
18	6					1
19	16	6			1	6
20	30	1	1			
21	14	1				1
22	3	7				3
23	11	1				1
24	101	10			2	7
26	21				14	9
28	57	3		1		3
29	20				7	5
30	6				5	5

Zone	Closest to Destination	Only Spot I Could Find	Closest to Dorm or Frat/Sor House	Going to Bookstore or Student Center	Use Reserved Space	Other
31	12	3			7	2
32	15	3			20	
33	16	2			5	1
35	18	3			1	1
37	17	2	3			
38	28	2	3		4	3
39		2	5			
40	10				1	
42	21	13	39			1
45	7					
46	2	1				
47	3	2	14			
48	1	2	10		2	
49	2	1	10	1	3	1
50		1	2			
51	8		10	1	3	3
52	3	2	10		1	
53	8	4	1		3	
54	8	10	23		3	2
55	3	9	25	4		
56		7	2			3

Table 4d. Questionnaire Results by Traffic Zones--
Question 6: "Do you normally park in this area?"

Zone	Yes, Most of the Time	Yes, All of the Time	No, Today Was A Special Case
1	38	9	4
2		1	
3	1	5	
4	18	10	7
5	7	3	2
6	44	23	8
7	4	8	
9	221	49	22
10	4	3	6
12	7	1	1
13	11	5	4
14	15	20	1
15	27	22	1
16	43	49	2
17	1	10	
18	4	3	
19	16	9	4
20	21	7	3
21	7	6	1
22	10	1	2
23	5	4	4
24	88	47	9
26	8	33	
28	35	25	4
29	11	15	2
30	6	8	

Zone	Yes, Most of the Time	Yes, All of the Time	No, Today Was A Special Case
31	15	20	4
32	13	23	2
33	14	9	1
35	21	1	1
37	10	9	3
38	22	12	3
39	4		3
40	11		
42	30	7	7
45	4	1	2
46	1	1	1
47	8	9	3
48	7	6	2
49	12	5	1
50	2	1	
51	12	7	6
52	14	1	1
53		5	4
54	33	9	6
55	21	12	5
56	6	3	2

Table 5. Campus Population

ACTUAL ENROLLMENT

	QUARTER	FRESHMAN	SOPHOMORE	JUNIOR	SENIOR	5th YEAR	MS	PHD	SPECIAL	TOTAL
1971	WINTER	1694	1555	1345	1527	53	922	396	181	7673
	SPRING	1492	1434	1301	1561	63	903	381	165	7300
	SUMMER	405	415	618	739	26	705	321	124	3353
	AUTUMN	2054	1524	1502	1327	64	1049	396	209	8125
1972	WINTER	1484	1498	1473	1415	74	996	385	191	7516
	SPRING	1336	1410	1392	1491	89	928	368	186	7200
	SUMMER	396	393	589	665	30	729	320	84	3206
	AUTUMN	2120	1452	1454	1360	64	1068	385	145	8048
1973	WINTER	1529	1452	1444	1463	60	1014	367	168	7495
	SPRING	1357	1356	1422	1503	65	954	348	136	7141

PROJECTED ENROLLMENT - (as of January, 1973) (for the autumn quarter)

1973	8290	1978	9100
1974	8390	1979	9400
1975	8490	1980	9670
1976	8600	1981	9940
1977	8825	1982	10220

FACULTY/STAFF

Spring 1973 - 2282

faculty only - 800
staff only - 1482

The above figures were provided by the Office of the Registrar.

APPENDIX B

APPENDIX B

REMARKS

Of the 1,549 drivers that returned questionnaires, 543 (38%) of them felt strongly enough about something (not necessarily parking) to include some remarks. A listing of those remarks and the number of times it was recorded (number/percent) follows. In some cases the language used has been changed to maintain the dignity of this report.

Regulations:

Excessive fees for parking permits: 13/2.3%

Motor Vehicle Regulation - difficult to understand, comply: 5/.9%

Reserved spaces should be free: 1/.1%

Faculty/staff should not have to purchase parking permits: 12/2.2%

Unfair fee allocations, ability to pay: 7/1.2%

No fees for all: 10/1.8%

Regulations are out of date: 1/.1%

There should be no special spaces: 3/.5%

Fines too expensive: 8/1/4%

Married students should not have to pay for their own lot: 1/.1%

Remove operational aspects of parking from Campus Planning: 1/.1%

Co-ops should not have to pay for full year permits: 2/.3%

No parking on student class priority: 5/.9%

No distinction between perimeter and central permits: 4/.7%

There should not be any fee lots: 6/1.1%

All permits issued on seniority basis: 1/.1%

Restrict hill to pedestrians only: 1/.1%

No fines for employees: 3/.5%

Commuter students should have parking priority: 1/.1%

Cars for Junior/Seniors/Grads only (commuters excepted): 1/.1%

Special graduate student lot illegal: 3/.5%

Enforcement:

Unfair disposition of justice: 7/1.2%

Too many tickets are given: 3/.5%

Regulate visitors: 1/.1%

Inconsistent and sporadic enforcement (specifically non-permit cars): 96/17.6%

There should not be student police: 3/.5%

There should only be fines - not dismissal for violations: 1/.1%

Non-enforcement of regulations: 40/7.3%

Good job done by police: 3/.5%

Insufficient protection from vandals: 12/2.2%

Favoritism toward students: 5/.9%

Favoritism toward faculty/staff: 10/1.8%

Plum Street parking unfair (quarterly signup): 3/.5%

Police are not of the highest mentality: 7/1.2%

Traffic court does not dispense fair judgements: 1/.1%

Too much time spent giving tickets, not enough on crime: 2/.3%

Do not tow away illegally parked cars: 1/.1%

Too much enforcement: 5/.9%

Enforce EE lot better: 4/.7%

Enforce graduate student lot better: 4/.7%

General Parking:

Lack of spaces: 8/1.4%

Area I Dorm parking inadequate: 9/1.6%

Need more faculty spaces: 1/.1%

Too many faculty spaces: 21/3.8%

Too many reserved spaces: 8/1.4%

Too many students and visitors in faculty spaces: 22/4.0%

More parking on hill: 5/.9%

Make everyone park on perimeter: 6/1.1%

Student Center pay lot not used enough: 1/.1%

More short term parking by Post Office, Library, Knowles: 24/4.4%

Faculty spaces available to students after 10am: 2/.3%

Satisfied: 4/.7%

More graduate student spaces: 4/.7%

Multi-level garage: 24/4.4%

Parking areas not adequately marked, signed or mapped: 9/1.6%

Redesign lots for more efficient use of space: 1/.1%

More visitor spaces: 8/1.4%

More motorcylce spaces: 2/.3%

More procurement office spaces: 4/.7%

Overall dormitory parking inadequate: 9/1.1%

Too many cars on campus: 9/1.6%

"Big Shots" get special attention: 6/1.1%

Lack of bicylce parking spaces: 1/.1%

Illegal parking of Physical Plant vehicles: 1/.1%

Card access lot by Library unused: 7/1.2% (high priority area)

Stinger routes not posted: 1/.1%

Too much central campus parking: 1/.1%

Shuttle Systems and MARTA:

Some type of shuttle system required: 11/2.0%

Stinger not regular enough: 2/.3%

Should be MARTA connections to campus: 3/.5%

Physical Problems:

Parked cars on some roads, interfere with driving: 2/.3%

Pave the AEπ lot: 1/.1%

Poorly maintained roads: 4/.7%

Enterance/Exit to CE/Physics lot is dangerous: 9/1.6%

Put in speed humps: 1/.1%

More shade trees in lots (no mention of birds): 2/.3%

Covered walkways from lots: 3/.5%

Parking spaces too small: 4/.7%

Campus Drive and Hemphill intersection is bad: 1/.1%

Miscellaneous:

No motorcylces on campus; noise pollution: 1/.1%

Use faculty lots that are not full: 5/.9%

Campus Planning Department - not nice people: 1/.1%

Dr. Clyde Robbins might be happier in a different job and on a different campus: 21/3.8%

"Tear down ESM Building and use it as a parking lot": 1/.1%

"I don't let these things bother me.": 1/.1%

"Inept handling of everything": 1/.1%

"If a system is to work it must have the support of those being served even if they happen to be students.": 1/.1%

"Tear down Grant Field and use it as a parking lot.": 1/.1%

"Those pavement reflectors on Ferst tickle.": 1/.1%

GEORGIA TECH CIRCULATION STUDY

Prepared for the

Georgia Institute of Technology

By

Kenneth O. Voorhies

and

Jeffrey A. Wynne

October, 1973

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October 20, 1973

Dr. Joseph M. Pettit
President
Georgia Institute of Technology
Atlanta, Georgia 30332

Dear Dr. Pettit:

We are pleased to present our report prepared as part of the requirement for the Master's Degree in Civil Engineering. This report deals with pedestrian and vehicular circulation on the Georgia Tech campus as stated in the Circulation and Parking Surveys for the Georgia Tech Campus proposal.

We wish to express our thanks to Dr. Donald O. Covault, School of Civil Engineering for his guidance and assistance in the preparation of this report.

We hope that our recommendations will be of some help in alleviating circulation problems on campus.

Respectfully submitted,

Kenneth O. Voorhies

Jeffrey A. Wynne

PREFACE

In 1888, opening ceremonies were held for what was to become Georgia Institute of Technology. At that time, the nine acre campus was located in a rural setting outside the city limits of Atlanta and it had no traffic circulation or parking problems. In 1973, the campus occupies over 150 acres near the heart of urban Atlanta, with a student and staff population of about 9,000. This population generates over 60,000 intracampus person trips per day, both pedestrain and vehicular.

This study was authorized by President Joseph Pettit and was performed with the cooperation and support of the Office of Campus Planning. It was partially funded by a university research and training grant from the Urban Mass Transit Administration, administered by Atlanta University, and that assistance is gratefully acknowledged.

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Desire Lines [4]	- All Bus Trips - Major Generators	SEE ENVELOPE AT REAR
Desire Lines [5]	- Bicycle Trips - Major Generators	SEE ENVELOPE AT REAR
Desire Lines [6]	- Walk Trips to and from Student Center	SEE ENVELOPE AT REAR
Desire Lines [7]	- Walk Trips to and from Classroom Building	SEE ENVELOPE AT REAR
Desire Lines [8]	- Walk Trips to and from Library	SEE ENVELOPE AT REAR
Desire Lines [9]	- All Trips - Area I and II Dorms	SEE ENVELOPE AT REAR
Desire Lines [10]	- All Trips - Area III Dorms	SEE ENVELOPE AT REAR

ACKNOWLEDGEMENTS

The Circulation Study of the Georgia Tech campus was carried out under the directorship of Dr. Donald O. Covault, School of Civil Engineering. We wish to thank Dr. Covault for all his assistance in preparing this report. Dr. Paul H. Wright and Dr. Michael Bronzini, also made many helpful suggestions. Thanks also to Eric Bers and Laura Mack, for their assistance.

Kenneth O. Voorhies

Jeffrey A. Wynne

INTRODUCTION

In March, 1973, a circulation and parking study of the Georgia Institute of Technology was begun. While under the direction of Dr. Donald O. Covault and Dr. Paul H. Wright of the School of Civil Engineering, the study was funded by the Georgia Tech Office of Planning and Atlanta University. The studies were authorized by Dr. Joseph Pettit, President in charge of planning.

Four masters candidates in Civil Engineering undertook this study for completion of their Master's Degrees. Two of the students, Kenneth O. Voorhies and Jeffrey A. Wynne, participated in the circulation portion while the two other students, Michael L. Frey and Frederick D. Puncke, Jr., handled the parking section.

Circulation survey questionnaires were distributed by mail to the student body and the faculty and staff at Georgia Tech in May, 1973. At that time, Spring Quarter, 1973, the school enrollment was 5,839 undergraduate students, 1,302 graduate students, and 1,774 faculty and staff members.

The results were tabulated and reported in August, 1973.

PURPOSE AND PROCEDURES OF STUDY

The circulation study of the Georgia Tech campus was carried out in order to determine the circulation patterns of vehicles and people within the bounds of the campus. To accomplish this purpose, an origin-destination survey questionnaire was mailed to each registered student and each presently employed faculty and staff member (in spring quarter, 1973). The questionnaire is shown in Appendix I. In addition to the origin-destination of all internal campus trips for one workday each person receiving the questionnaire was asked about the distance of residence to campus, mode of travel on campus, automobile, bicycle, and motorcycle ownership, place used for parking if an auto was used, and suggestions for improvement to campus circulation.

A base map with traffic zones was needed, therefore the Georgia Tech campus was divided into 56 different zones for purposes of this study. The zones were chosen according to compatible uses and locations. These zones coincide with the zones used in the parking study.

Figure 1 shows the zone boundaries as they were used in the study.

The origin-destination portion of the survey was used to make an inventory of internal campus trips by day of week, hour of day, mode of travel (auto, walk, bus, bicycle, motorcycle) and purpose of trip (class, study, meal, recreation, school business, other).

The results of the study provide a basis for planning improvements to streets, sidewalks, bicycle paths, and campus mass transit system.

GEORGIA TECH TRANSPORTATION STUDY

TRAFFIC ZONES

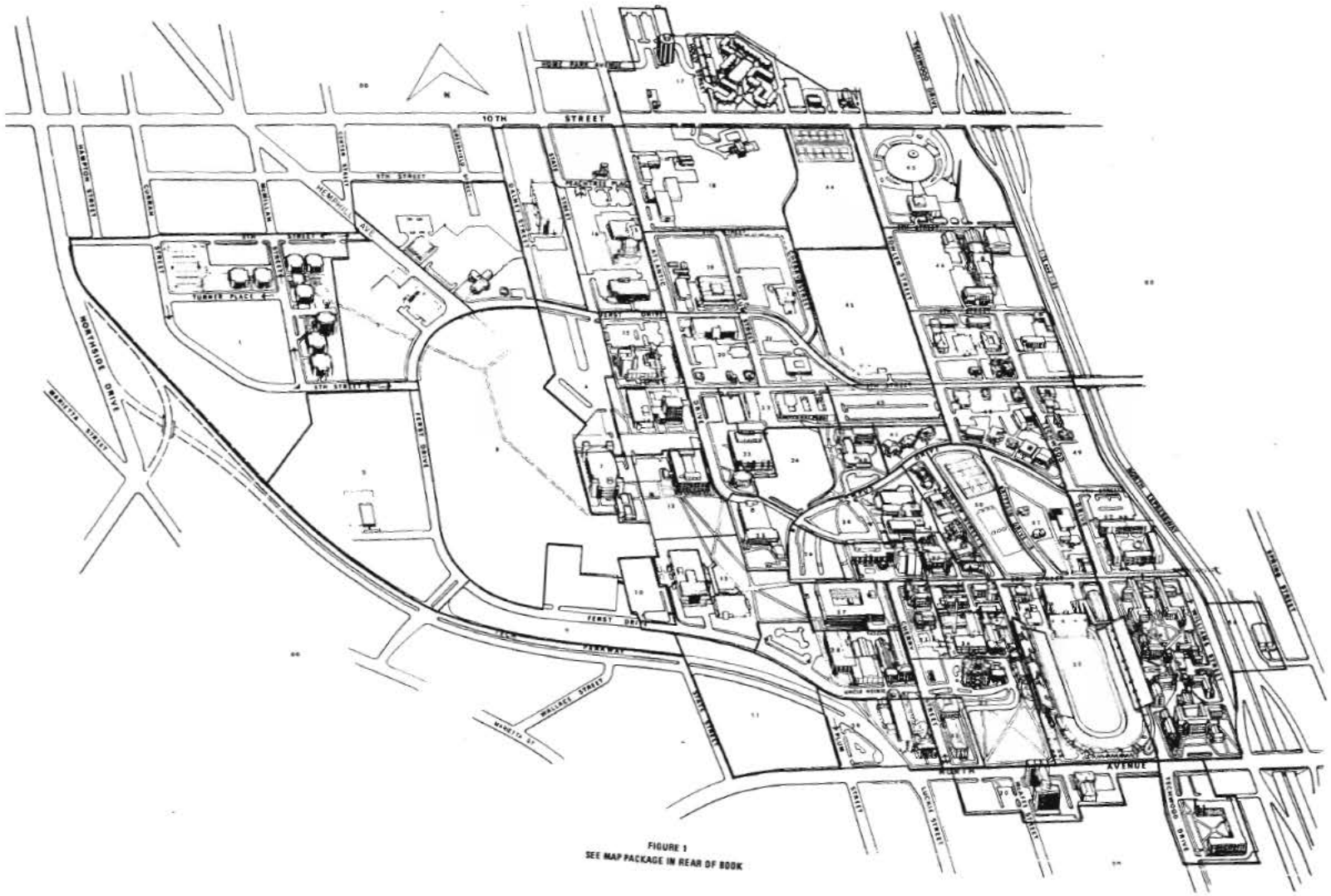

FIGURE 1
SEE MAP PACKAGE IN REAR OF BOOK

RESULTS

The questionnaires that were returned by mail were coded and keypunched on data cards. A computer program was written in FORTRAN IV computer language to compile the data into a usable format for analyzing. This program counted the data cards and placed each bit of data into the appropriate answer category. The complete program is included in Appendices II and III.

The results of this program showed that 2,199 people responded to the survey. Of the 8,882 people who received the questionnaire, 24.77% returned it. See page 64 in Appendix V for the number and percent responding to each question and see Appendix IV for definition of all variable names. Of these 2,199 responses, 1,828 were fully usable origin-destination surveys, while the other 377 surveys were only good for compiling the first five questions. So for purposes of compiling the origin-destination data only 20.56% of the campus population was used. The 20.56% response was lower than the normally expected response rate which is in the neighborhood of 30%. The reason for the low rate of return probably was due to the length and complexity of the questionnaire. Also due to circumstances beyond our control, the survey was not mailed out until the week before finals in spring quarter, so everyone was busy with school work.

The response rate according to school affiliation varied with each category. See figure 2 for the distribution of respondents by school affiliation. Of the 2,199 surveys returned the response rates were 20.3% of the undergraduate population, 23.7% of the graduate population, and 38.9% of the faculty and staff. Even with the lowest rate of return, the undergraduates still accounted for 53.8% of the surveys received. See page 65 in Appendix V for detailed data on response rates.

The departmental returns also varied greatly. The largest number of returns were from Electrical Engineering, Civil

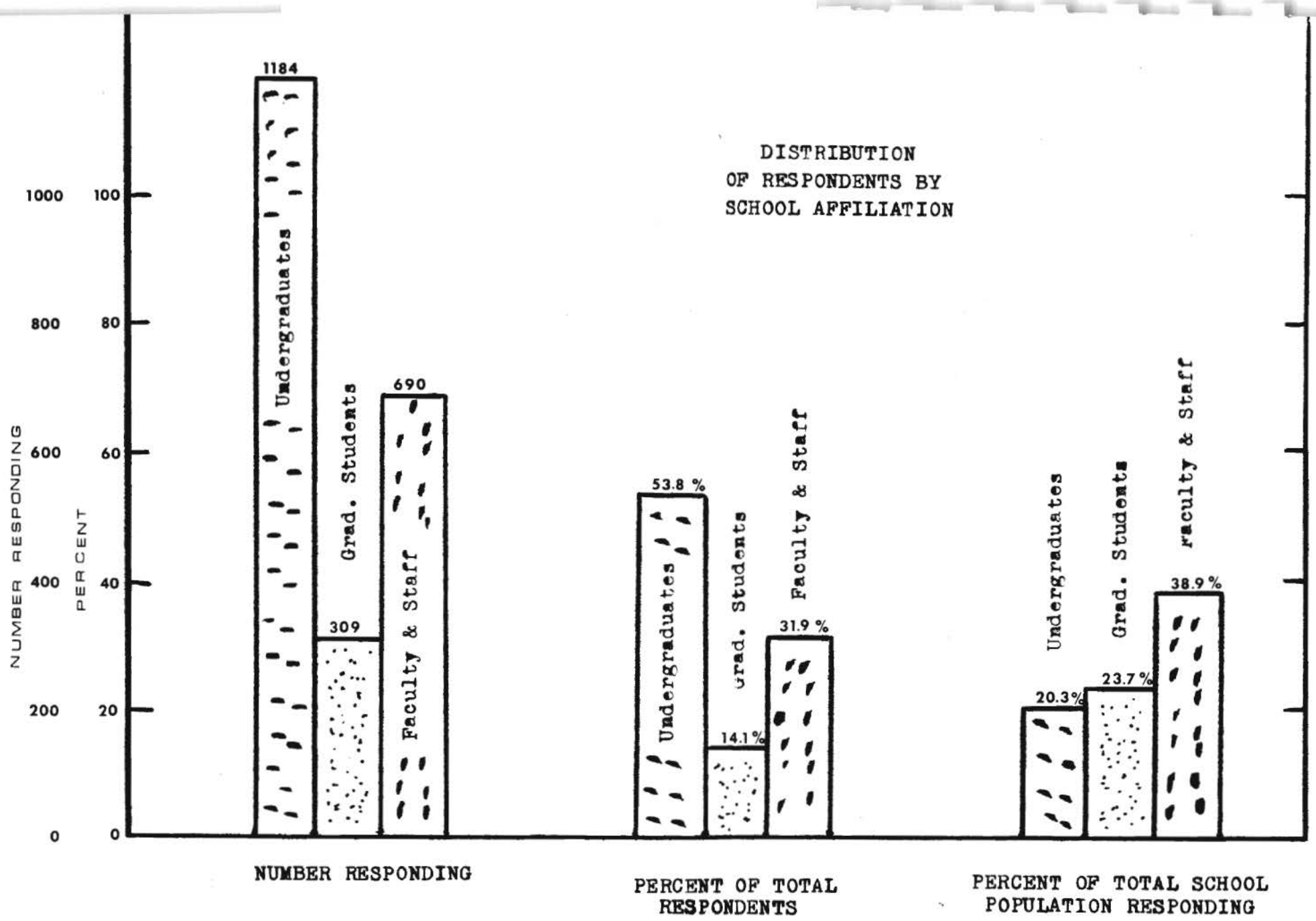
DISTRIBUTION
OF RESPONDENTS BY
SCHOOL AFFILIATION
NUMBER RESPONDING
PERCENT
1000
800
600
400
200
0
100
80
60
40
20
0
1184
309
690
Undergraduates
Grad. Students
Faculty & Staff
53.8 %
14.1 %
31.9 %
Undergraduates
Grad. Students
Faculty & Staff
20.3%
23.7 %
38.9 %
Undergraduates
Grad. Students
Faculty & Staff
NUMBER RESPONDING
PERCENT OF TOTAL
RESPONDENTS
PERCENT OF TOTAL SCHOOL
POPULATION RESPONDING

FIGURE 2

Engineering, and Industrial Management. Also the Mechanical Engineering, the Engineering Experiment Station, and the Industrial Engineering departments each had more than 100 returned surveys. For actual number and response by department, see pages 64 and 65 in Appendix V. The tabulation of answers to Question 2 are shown in Figure 3. It was found that 39.4% of the people responding live on campus. Also, the results show that 17.0% of the respondents live 0-5 miles from Tech, 16.3% live 5-10 miles from Tech, and 26.9% live more than 10 miles from campus. This means that slightly over 60% of the people affiliated with Georgia Tech do not reside on campus and therefore must commute to campus. Page 65 in Appendix V shows the number and percent responding in each category.

The results of Question 3 (shown in Figure 4) shows how the people living off campus actually did commute. It was found that 87.8% of these commuters drove cars to campus. If this percentage was expanded to the total number of people living off campus, there would be 3,941 cars coming to campus each day. This fact explains the need for large parking areas. In addition to those driving to Tech, 5.44% or 244 people were passengers in automobiles when coming to campus. The percentage of people commuting by motorcycle, bicycle, bus, or walking were all very small, between 1% and 3%. For the detailed number and percentages see page 65 in Appendix V.

Question 4 results showed that the commuters parked in almost every one of the designated traffic zones, but there were several zones that had large numbers of parkers. As was expected from the results of the Parking Survey, the largest number parked in the EE lot (Zone 24). The two areas with largest number of parking respondents were the CE student lot (Zone 6) and the non-pay lot behind the Student Center (Zone 9). For complete listing of parking zones and number and percentage of respondents see page 65 and 66 in Appendix V.

The results of Question 5 point out that the Georgia Tech community is an affluent one. Figure 5 shows that 78.3% of the

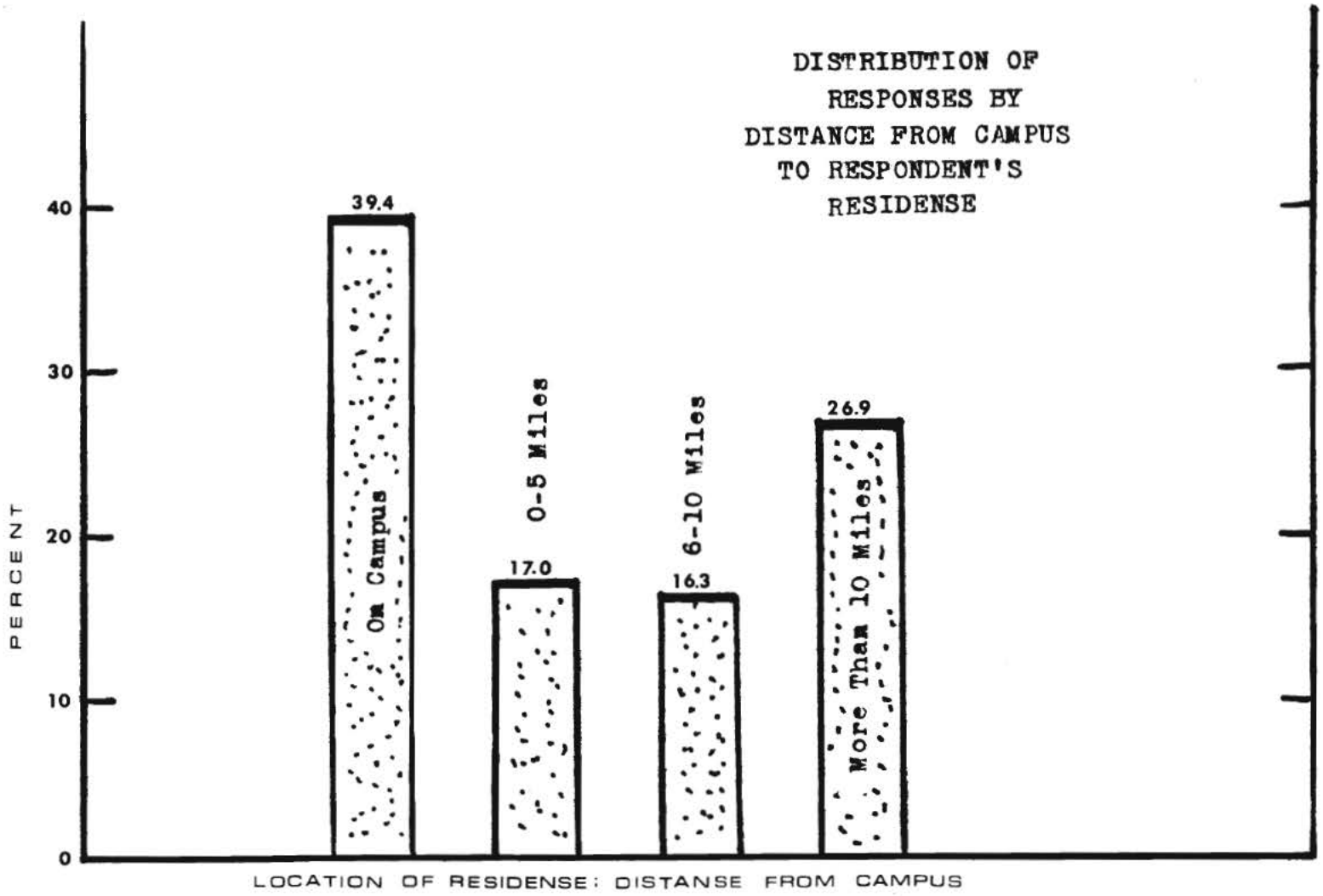
DISTRIBUTION OF
RESPONSES BY
DISTANCE FROM CAMPUS
TO RESPONDENT'S
RESIDENSE
PERCENT
0
10
20
30
40
39.4
On Campus
17.0
0-5 Miles
16.3
6-10 Miles
26.9
More Than 10 Miles
LOCATION OF RESIDENSE: DISTANSE FROM CAMPUS

FIGURE 3

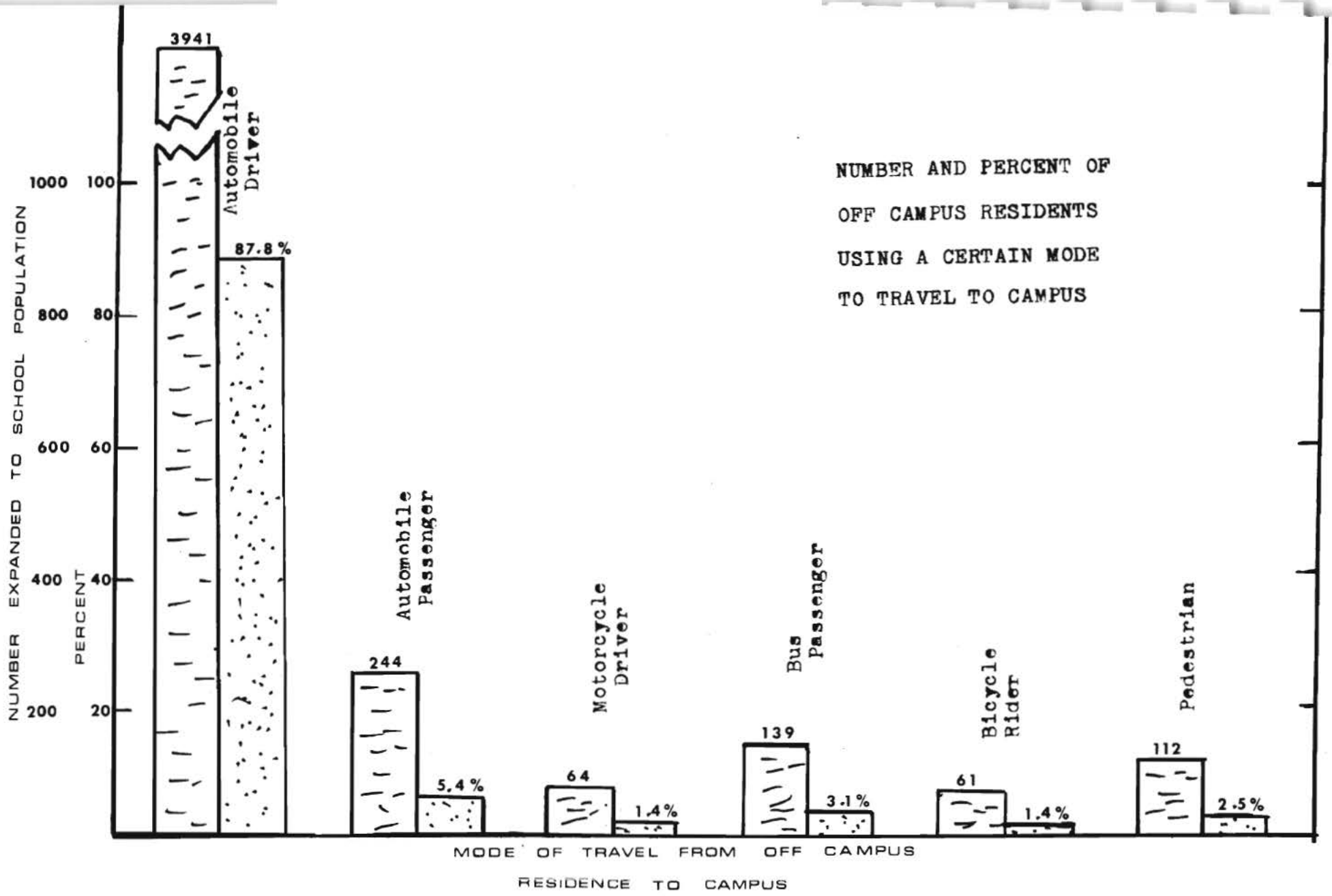
NUMBER AND PERCENT OF
OFF CAMPUS RESIDENTS
USING A CERTAIN MODE
TO TRAVEL TO CAMPUS
NUMBER EXPANDED TO SCHOOL POPULATION
PERCENT
1000
800
600
400
200
100
80
60
40
20
3941
87.8%
Automobile Driver
244
5.4%
Automobile Passenger
64
1.4%
Motorcycle Driver
139
3.1%
Bus Passenger
61
1.4%
Bicycle Rider
112
2.5%
Pedestrian
MODE OF TRAVEL FROM OFF CAMPUS RESIDENCE TO CAMPUS

FIGURE 4

respondents have automobiles available for their own use on campus. If this number was expanded to the entire campus population, there would be 6,951 cars available for use on campus. Also, 2.6% have motorcycles and 11.6% have bicycles available. The expanded numbers then would be 226 motorcycles and 1,026 bicycles. It was assumed that everyone on campus had walking and the bus available to them. See page 66 in Appendix V for the detailed results.

The day of the week reported on the questionnaire varied with the respondent. Figure 6 shows that Monday and Friday were the most heavily reported days. The detailed data are shown on page 66 of Appendix V.

The data obtained on trip making yielded very interesting results. An average of 7.30 trips per person per day on campus was reported. If this number was expanded to the school population there would be 64,846 trips. Student (both undergraduate and graduate) trips were 57,274 giving an average of 8.02 trips per day. The number of faculty and staff trips was 9,145 for an average of 5.15 trips per day. These data are shown in Figure 7 and on page 67 in Appendix V. It can be noted from these data that students made approximately 82% of the total trips.

The distribution of trips by day of the week (Figure 8) compare favorably with the percentages of surveys reported on each day (Figure 6). There were more trips reported on Monday and Friday, as there were more surveys reported on Monday and Friday. The number and percentages of trips by day of the week is shown on page 67 of Appendix V.

The class trip was the most frequently mentioned trip purpose as seen in Figure 9. Class trips accounted for 28.3% of the trips reported, while school business was reported as 14.2% of the trips, meals as 13.2%, study as 9.9%, and recreation as 6.4%. Also 26.3% of the trips were reported as a purpose other than the purpose listed and 1.3% of the total trips had no purpose reported. The number and percentage of trips by each purpose is shown on page 67 in Appendix V.

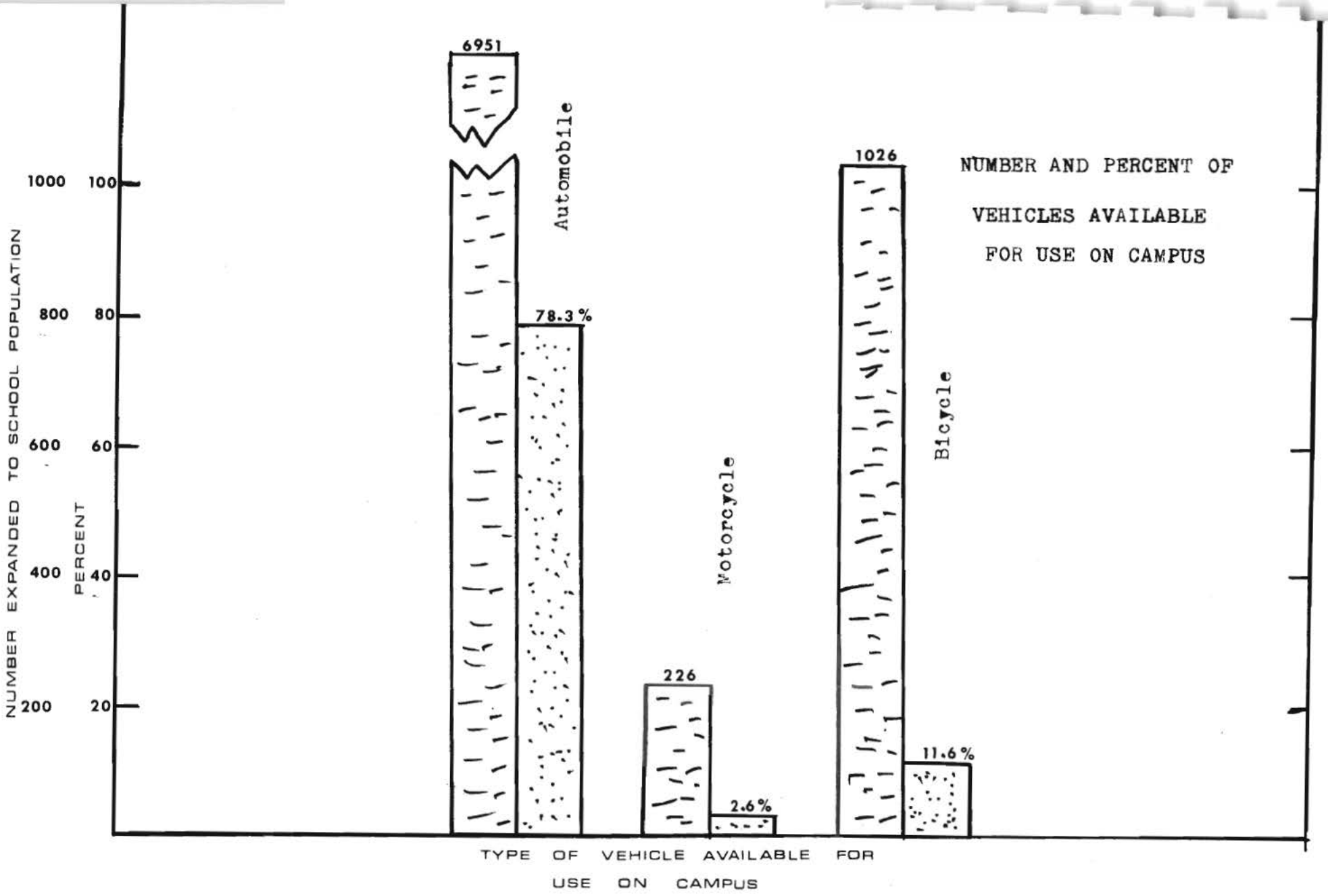
NUMBER AND PERCENT OF
VEHICLES AVAILABLE
FOR USE ON CAMPUS
NUMBER EXPANDED TO SCHOOL POPULATION
PERCENT
1000
800
600
400
200
100
80
60
40
20
6951
78.3 %
226
2.6 %
1026
11.6 %
Automobile
Motorcycle
Bicycle
TYPE OF VEHICLE AVAILABLE FOR
USE ON CAMPUS

FIGURE 5

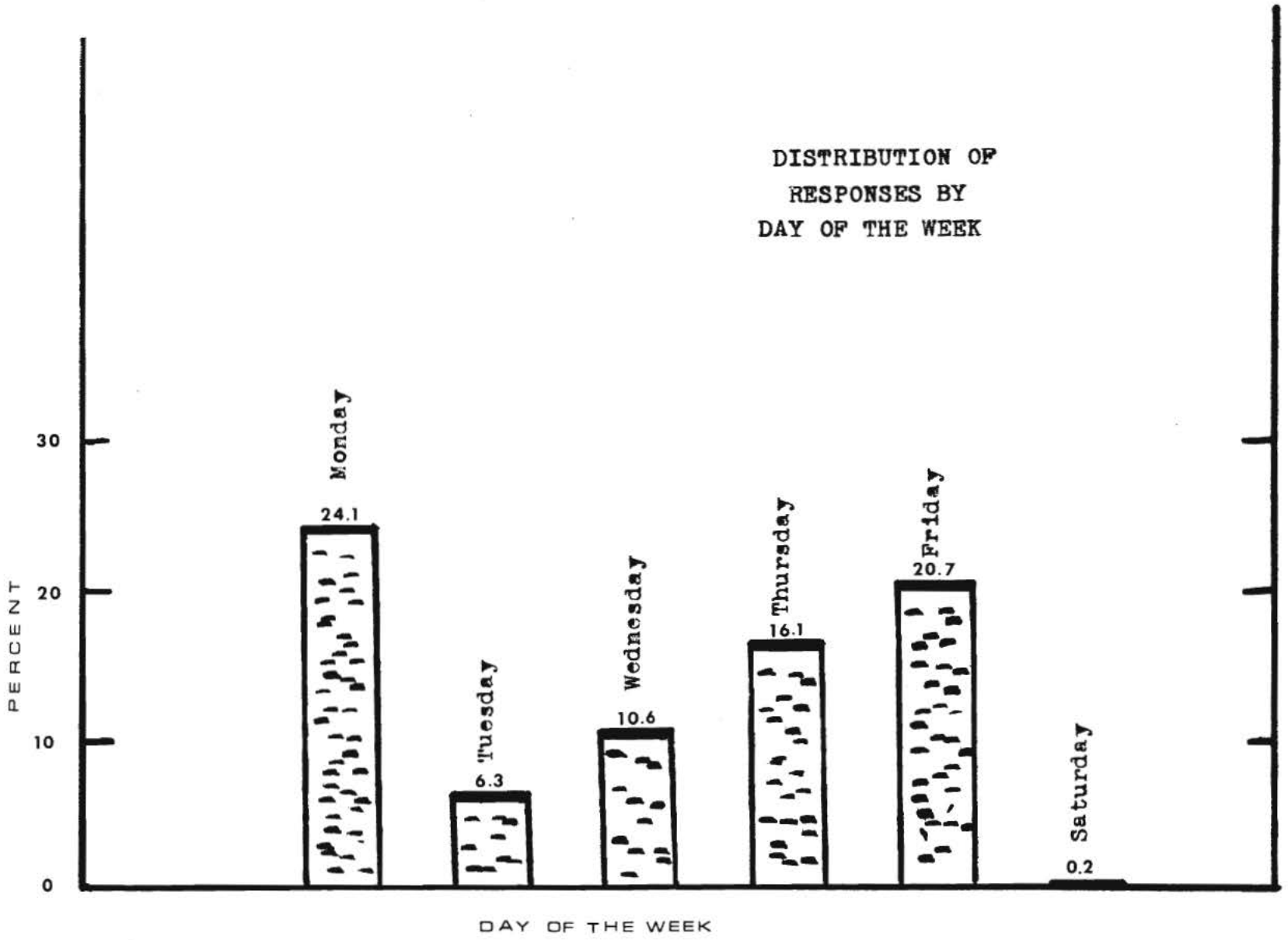
DISTRIBUTION OF
RESPONSES BY
DAY OF THE WEEK
PERCENT
0
10
20
30
Monday
24.1
Tuesday
6.3
Wednesday
10.6
Thursday
16.1
Friday
20.7
Saturday
0.2
DAY OF THE WEEK

FIGURE 6

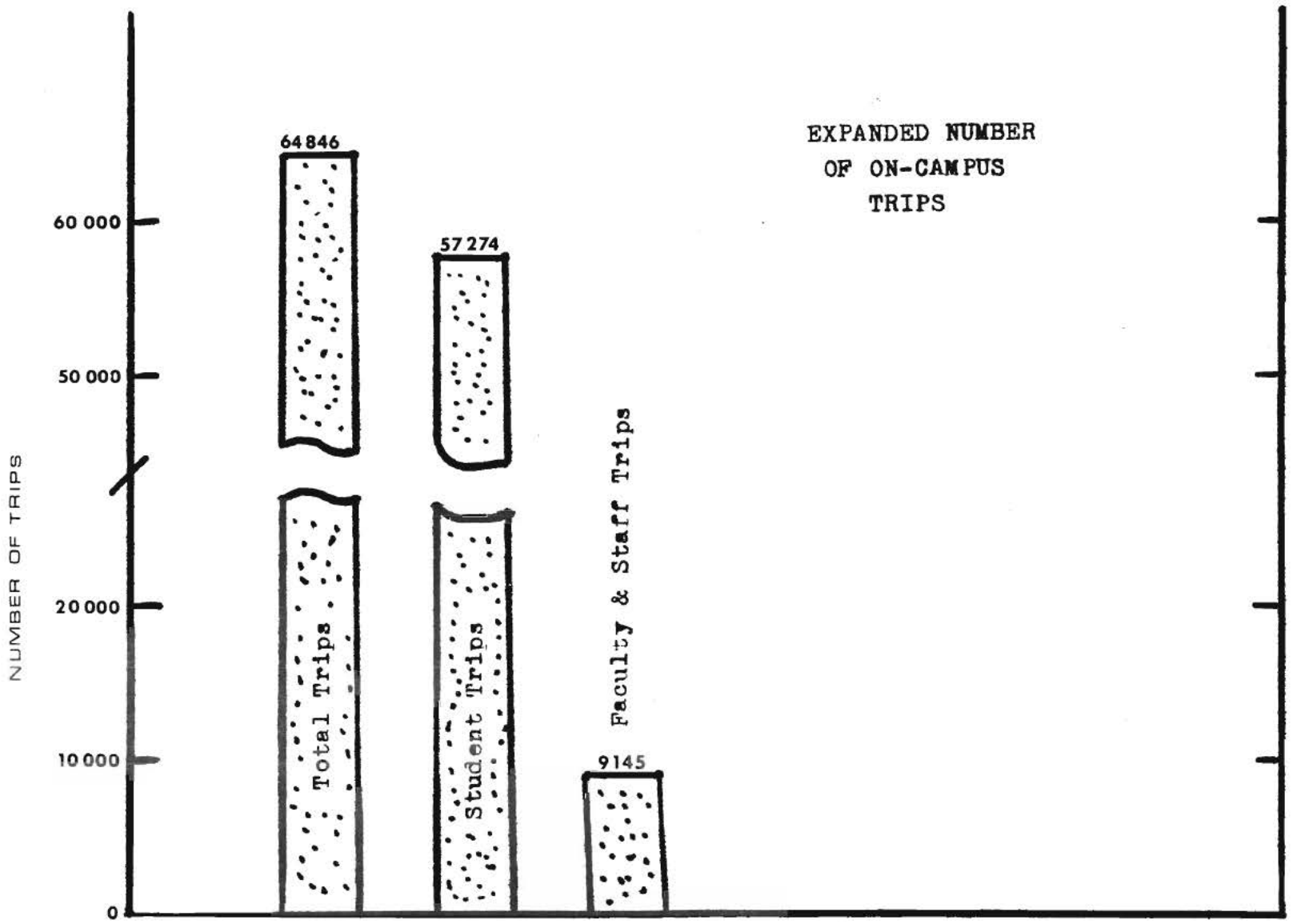
EXPANDED NUMBER
OF ON-CAMPUS
TRIPS
NUMBER OF TRIPS
60 000
50 000
20 000
10 000
0
64 846
57 274
9145
Total Trips
Student Trips
Faculty & Staff Trips

FIGURE 7

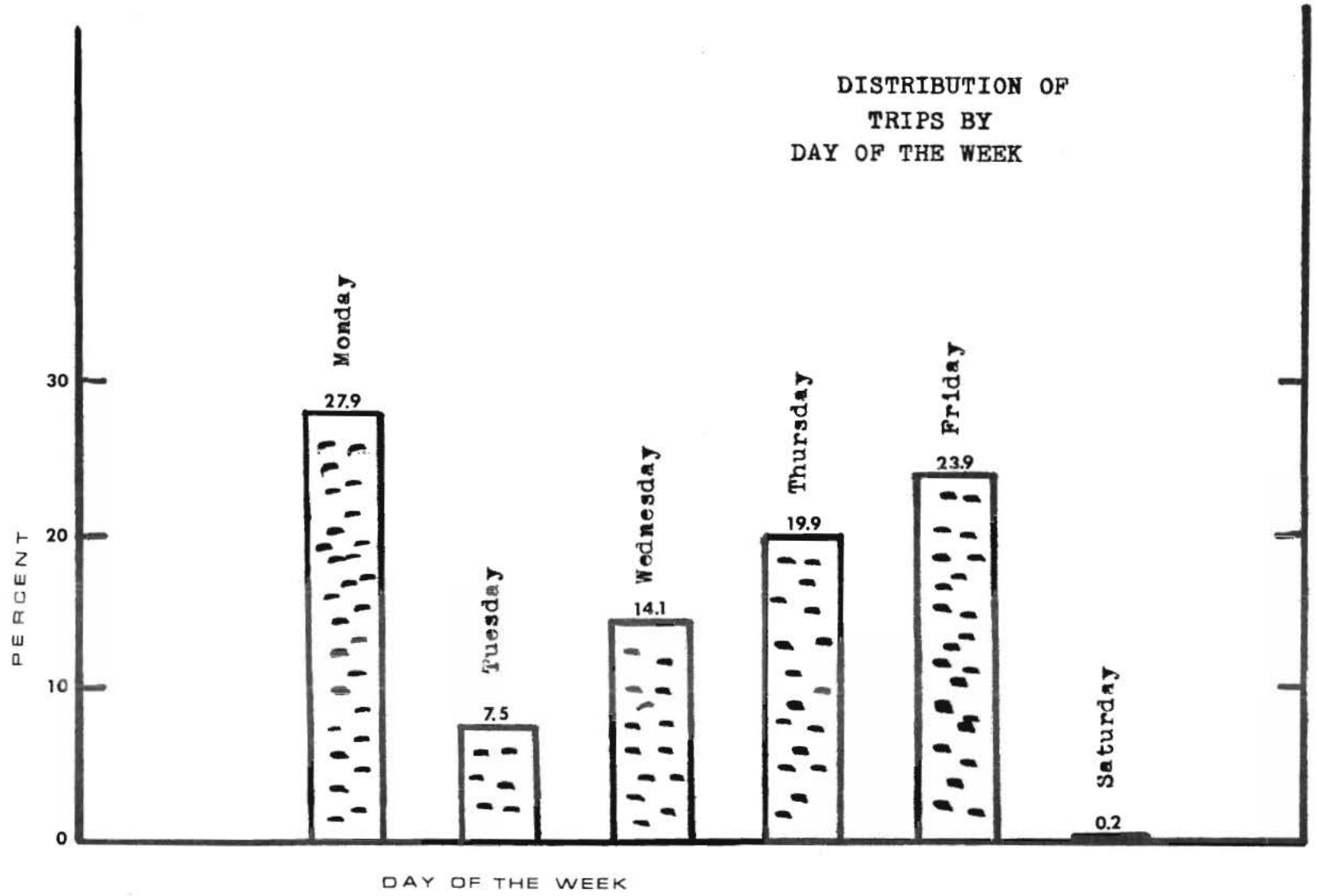
DISTRIBUTION OF
TRIPS BY
DAY OF THE WEEK
PERCENT
30
20
10
0
Monday
27.9
Tuesday
7.5
Wednesday
14.1
Thursday
19.9
Friday
23.9
Saturday
0.2
DAY OF THE WEEK

FIGURE 8

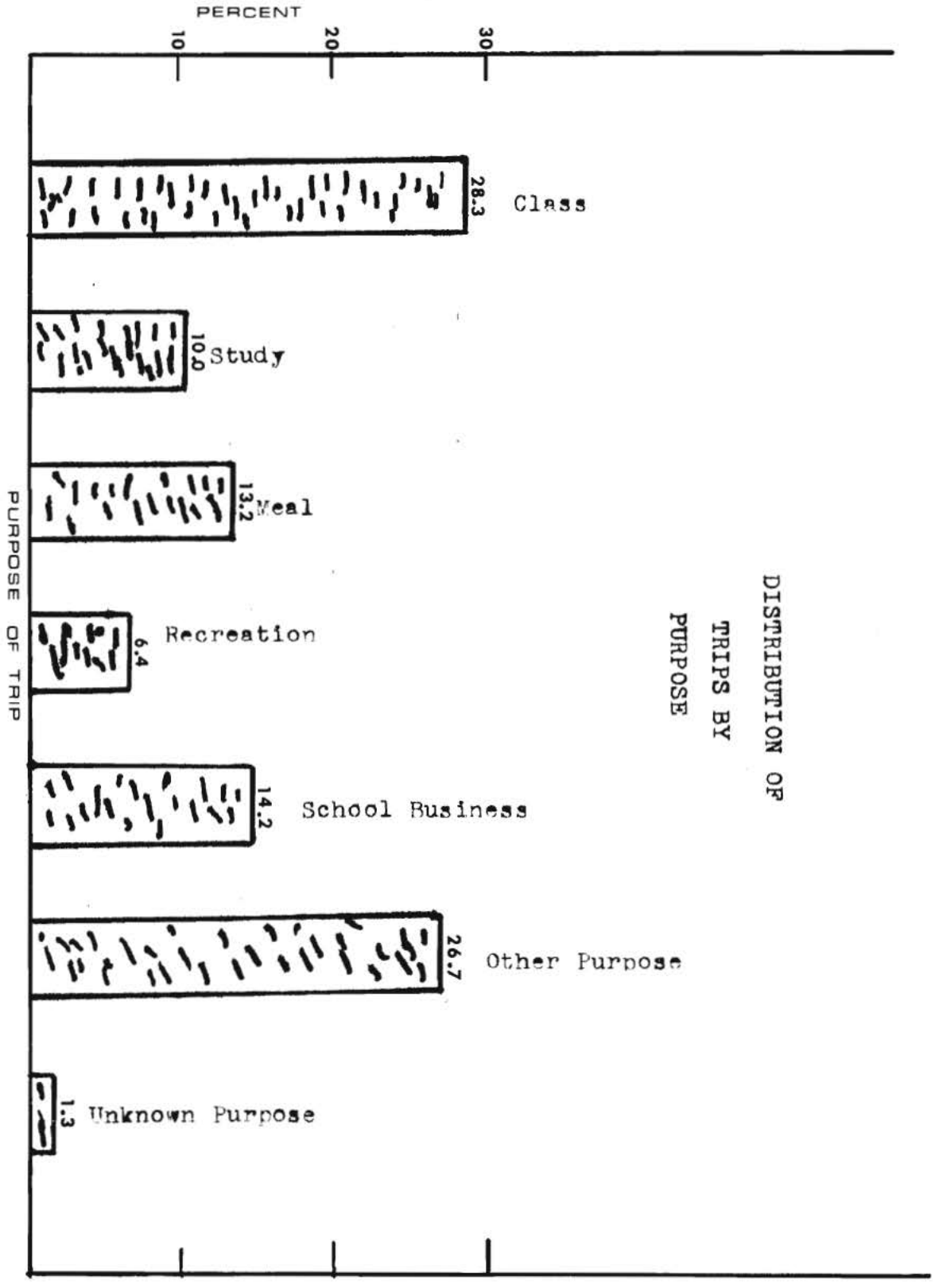
DISTRIBUTION OF
TRIPS BY
PURPOSE
PERCENT
10
20
30
PURPOSE OF TRIP
28.3
Class
10.0
Study
13.2
Meal
6.4
Recreation
14.2
School Business
26.7
Other Purpose
1.3
Unknown Purpose

FIGURE 9

Walking was the most frequently mentioned on campus mode of travel as shown in Figure 10. Walk trips accounted for 65.1% of the total trips reported. Car trips were 26.1% of the trips made, while bus trips were reported at 3.6%, bicycle trips were 2.6%, motorcycle trips were 0.7%, and 1.9% of the trips had no reported mode. The number and percentage of trips reported by each mode is shown on page 67 of Appendix V.

The distribution of trips per hour shows that most of the trips occur between 8 A.M. and 5 P.M. A listing of trips reported by hour for all hours of the day is shown on page 67 of Appendix V. The percent trips taken in each one-hour time period is shown in figure 11. A period of 7 A.M. to 7 P.M. was used in this graph. The peak is between 10 A.M. and 11 A.M., however, between 9 A.M. and 2 P.M. the number of trips each hour is almost the same; between 7,800 and 9,300 trips per hour.

The trip matrices (page 67 through 93 in Appendix V) show that there are several zones that produce and attract more trips than the other zones. By adding the total number of origins and total number of destinations for the zones, the zones of major trip generation were determined. The largest generators are shown in Table 1. The largest single generator was the Student Center with 15,252 origins and destinations per day. This accounts for 29.9% of the total trips taken on campus. Trips with an off campus origin or destination accounted for 21.3% of the 64,846 trips. So actually on campus trips were only 78.7% of the total trips or a total of 51,027 trips. See Table 1 for further details.

The largest single number of trip interchanges between two zones is between the Student Center and the Skiles Classroom Building. Desire Lines [1] shows that 2,269 trips per day are made between the Student Center (Zone 12) and the Classroom Building (Zone 27). Other large trip interchanges are between the Student Center and the Area III dorms, between the Student

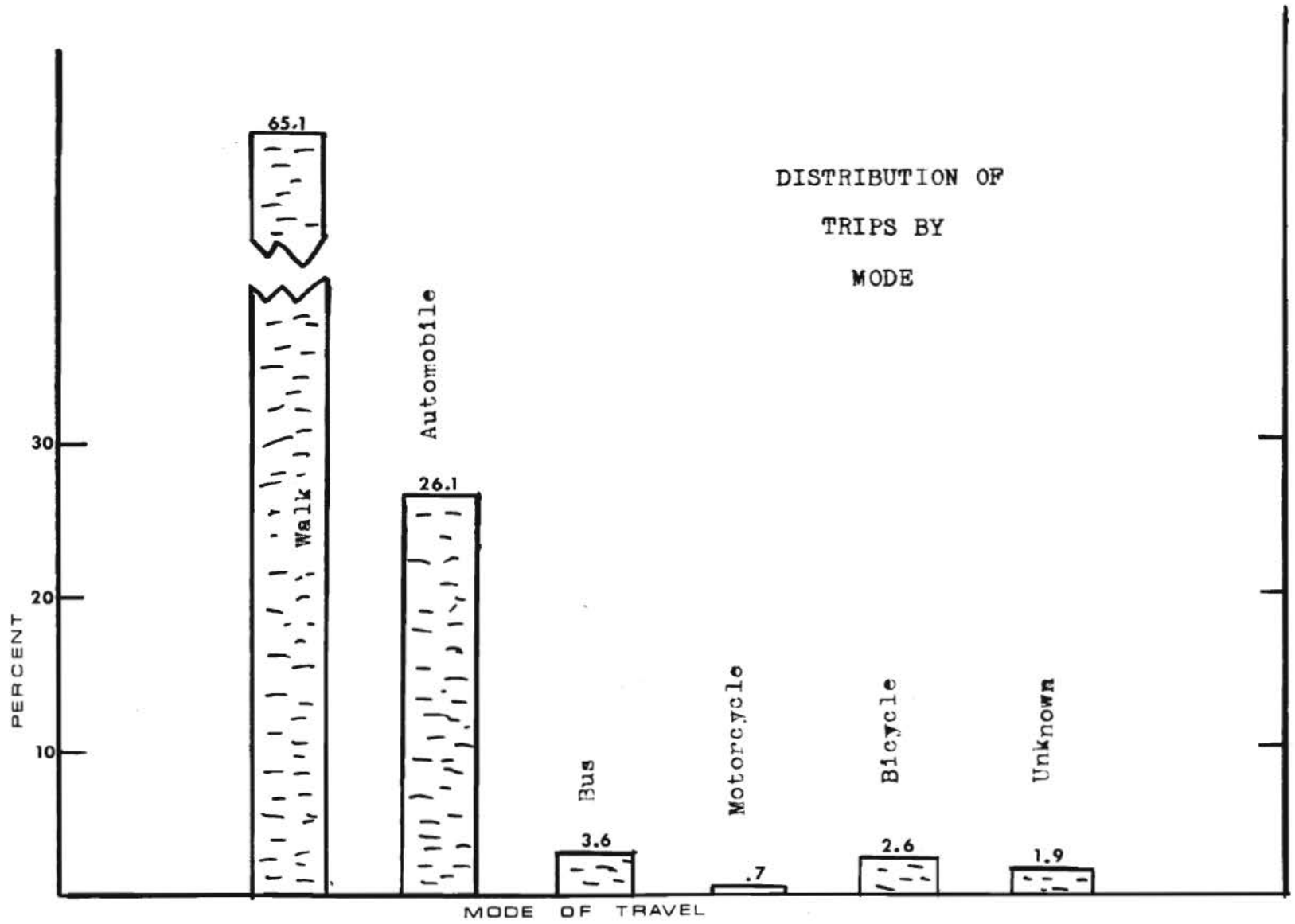
DISTRIBUTION OF
TRIPS BY
MODE
PERCENT
30
20
10
65.1
Walk
Automobile
26.1
Bus
3.6
Motorcycle
.7
Bicycle
2.6
Unknown
1.9
MODE OF TRAVEL

FIGURE 10

DISTRIBUTION OF

TRIPS BY

HOUR OF DAY

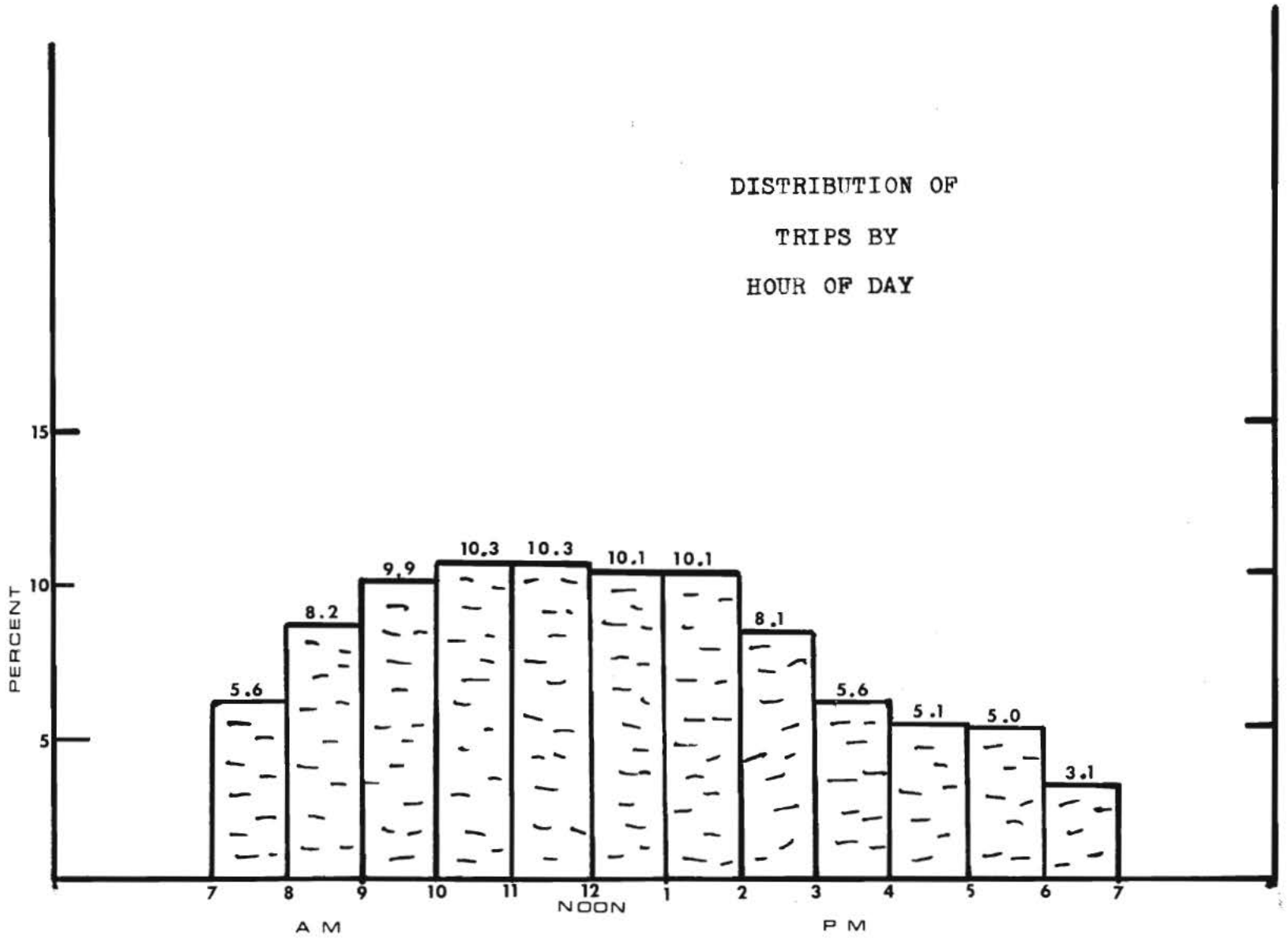

FIGURE 11

TABLE 1

TRIPS TO AND FROM MAJOR GENERATORS

Zone	Number	% of Total	% on Campus
12 - Student Center	15,252	23.5	29.9
00 - Off Campus	13,819	21.3	
27 - Classroon Building	10,456	16.1	20.5
54 - Area I Dorms	6,739	10.4	13.2
36 - Library	5,228	8.1	10.2
01 - Area III Dorms	4,883	7.5	9.5
15 - Physics Building	4,543	7.0	8.9
52 Area II Dorms	4,115	6.3	8.1
23 - E.E. Building	3,586	5.5	7.0

Center and the Physics Building, between the Classroom Building and the Area I dorms (Zone 54).

Desire Lines [2] shows the pattern of walk trips on campus. Since 65% of the total trips are walk trips, the pattern of walk trips is similar to the pattern of all trips.

Desire Lines [3] shows car trips on campus. It is found by addition of origins and destination with off campus addresses that 66.8% of the total car trips were off campus trips. Therefore of the total on campus trips only 11.0% were by car. The Desire Lines [3] show that the largest car trip interchanges are between the Student Center and the three dorm areas. Special attention was paid to the "Hill" area* because of parking shortages reported by the Parking Survey. In the ten zones in the "Hill" area there were 1,425 car trips reported.

As for bus traffic, Desire Lines [4] shows that most bus trips begin or end at the Area III dorms (Zone 1). By adding Zone 1 bus origins and destinations it was found that 71.6% of all bus trips on campus begin or end in Area III (Zone 1). Also bus trips account for 34.4% of all on campus trips made to or from the Area III dorms.

Desire Lines [5] shows that the major generators of bicycle trips are the Student Center, Physics Building, Classroom Building, and the three dorm areas.

Desire Lines [6] through [10] show trips to and from major generators, including the Student Center, Library, Classroom Building, and the Area I and II dorms, and the Area III dorms.

---

* The "Hill" area includes the Old C. E. Building, Library, Classroom Building, D. M. Smith Building, Dean of Students Building, Lynam Hall, I. E. Building, all Administration buildings, A. E. Building, M. E. Building, E.S.M. Building, Swann Building, and Savant Building (Zones 27, 28, 29, 31, 32, 33, 34, 35, 36, and 37).

Desire Lines [6] shows the walk trips to and from the Student Center. It can be seen that there are 2,211 walk trip interchanges per day between the Student Center and the Classroom Building. This compares with the total trip interchange rate of 2,269 per day. It can be said that virtually all trips between the Student Center and the Classroom Building are on foot. Other major interchanges are with the Library, the E. E. Building, and the Physics Building.

The Classroom building walk trip interchanges are shown on Desire Lines [7]. Again the largest interchange is with the Student Center. The other major interchanges are with the Physics Building, the Library, and the Area I dorms.

Desire Lines [8] shows that the major trip interchanges with the Library are to the Classroom Building and the Student Center.

The major trip interchanges with the Areas I and II dorms, shown in Desire Line [9], are with the Student Center and the Classroom Building.

Desire Line [10] show that the major interchanges with the Area III dorms are to the Student Center, Classroom Building and the Library.

SUMMARY OF REMARKS

At the end of the questionnaire a space for remarks was provided. As was expected, the Georgia Tech students and faculty had many varied comments concerning the transportation situation on the campus. After a thorough, time-consuming job of editing, a few general categories of serious suggestions were apparent.

The most frequently mentioned complaint was lack of the Stinger bus service to certain points on campus and at certain times of the day (especially between 3 and 5 P.M. and at night). Also, many people mentioned that they did not know the bus schedule and therefore did not ride the Stinger very often.

Another complaint mentioned often was the lack of short-term parking near certain buildings such as the Library, Post Office, Administration buildings, and the Computer Center.

Persons owning bicycles often complained about the almost complete lack of facilities for bicycles. Many bike riders suggested a system of bike paths for the campus.

Many people complained about the sidewalk planning on campus. They said that there are too many worn grass paths where sidewalks should be and too many sidewalks that are not being used. Another common complaint is the drainage of surface water which results in deposition of mud over many sidewalks, especially near the Student Center.

SUMMARY OF RESULTS

1. 2,199 questionnaires were returned which made a response rate of 24.8%, of these 1,828 were usable for origin-destination data. Therefore a response rate of 20.6% was found for the O-D study.

2. 39.4% of the people responding live on campus; therefore over 60% of the people associated with Georgia Tech must commute.

3. Of the people that commute 87.8% use cars to get to campus, which means 3,941 cars per day are driven to campus.

4. 78.7% of the people associated with Georgia Tech have cars available for their use. The number is 6,951 cars as compared to 226 motorcycles and 1,026 bicycles.

5. An average of 7.30 trips per person per day was reported. This gives a total of 64,846 trips per day.

6. The total number of student trips was 57,274 trips for an average of 8.02 trips per day.

7. The total number of faculty and staff trips was 9,145 for an average of 5.15 trips per day.

8. Class trips accounted for 28.3% of the trips reported, while school business was at 14.2%, meals at 13.2%, study at 9.9%, and recreation at 6.4%. Also 26.3% of the trips were reported as a purpose other than those listed.

9. Walking trips accounted for 65.1% of the total trips. Car trips were 26.1% of the trips, while bus trips were reported as 3.6%, bicycle trips as 2.6%, and motorcycle trips as 0.7%.

10. The peak hour was found to be between 10 and 11 A.M., however, the number of trips reported for the hours between 9 A.M. and 2 P.M. did not vary significantly.

11. The largest single trip generator was the Student Center with 15,252 trips or 29.9% of the total trips.

12. Off campus trips accounted for 21.3% of the total trips, therefore 51,027 trips were on campus trips out of the total of 64,846 trips.

13. The largest zonal trip interchange was between the Student Center and the Classroom Building.

14. 11.0% of the total on campus trips were made by car, therefore 89% of the on campus trips were made by walking or other vehicles.

15. The "Hill" area has 1,425 car trips per day as an origin or destination.

16. 71.6% of all bus trips on campus begin or end at the Area III dorms (Zone 1). Also 34% of all on campus trips to or from Area III are made by bus.

RECOMMENDATIONS

The results of the circulation study show that the present problems with traffic and people movement on the Georgia Tech campus are not insurmountable. Pedestrian circulation in the central campus is in good condition as pointed out by the fact that 65% of all on campus trips are by foot. Perhaps this is because of the closeness of most of the buildings in the central campus area. However, future plans call for the expanding of the campus, especially toward the west. This expansion will cause many changes in the circulation patterns of campus travel, as is already being experienced by the Area III dorm residents.

The major problem in circulation on the Georgia Tech campus is the automobile, which is also the major problem for almost every major university and city in the United States. Many of the central campus streets, such as Third Street, Fourth Street, and Cherry Street are just too narrow for two lanes of traffic and parking on both sides.

The results of the circulation study suggest a movement toward perimeter auto parking and the at least partial elimination of auto traffic in the central campus would be feasible. Since 89% of all on campus trips are already by modes other than auto, the change would not be as traumatic as expected. As the elimination of Hemphill Avenue, State Street, and part of Campus Drive made noticeable improvements to pedestrian and bicycle circulation, the additional limiting of traffic in other areas of the campus, most notable the "Hill" area, will probably also enhance pedestrian circulation.

It is obvious that auto parking near the campus will always be in demand since 60% of the people associated with Georgia Tech live off campus and 93% of these people drive or ride to campus. Interceptor parking lots placed strategically around the campus perimeter could handle the incoming auto traffic. Parking lots on Ferst Drive are already fulfilling this need near the Student Center, the M. E. Building, and the Physics and C. E. area.

The proposed extensions of Ferst Drive to a full ring around the campus would provide good auto circulation around the central campus, while at the same time providing access to most points on campus.

An integral part of this proposed perimeter system must be some form of secondary distribution to handle the on campus trips. If predictions for future growth in the Georgia Tech population hold true, then buses seem to be the only economically justifiable mode of distribution. The bus system should be made to serve the perimeter parking lots as well as the buildings in the central campus that are not near the perimeter.

A bus system could be made into a viable system on the Georgia Tech campus if certain improvements were made. Many people remarked on the returned surveys that they would ride the bus more often if the service was more frequent and the schedule was posted so that they knew when to expect the bus. The bus systems on many other campuses, such as the University of Georgia, have proven to be very efficient and have high ridership. In fact, at Georgia Tech, the Area III dorms, which receives the best bus service of any point on campus, already has a bus ridership that accounts for 34% of all on campus trips to and from Area III.

The bus system could be improved by simply reordering the priorities of parking and circulation. Presently the campus, like most other campuses, is built for the auto. If policies, such as removing some parking and making some parking areas short-term only were implemented then the impetus would be for people to walk or ride a bus or bike. Capital improvements to the bus system could be made from money collected from a student transportation fee rather than the present parking sticker fee.

Another important consideration should be the improvement of facilities for bicycle riders. Providing ramps in curbs and more bicycle racks would most likely increase bike ridership. The addition of bike lanes on streets or sidewalks or even separate bikepaths would be a possibility.

Ingress and egress to the campus should be considered also. It is important that connections to the MARTA system be convenient for use by many commuters to the Georgia Tech campus. At the very least bus service to and from both the proposed North Avenue and Tenth Street stations should be available at frequent intervals.

Of course, every plan should have an implementation scheme. Funding for public institutions is always a problem, so any Georgia Tech circulation plan must be carried out in several stages. The ultimate goal of the Georgia Tech circulation plan should be a perimeter road system with interceptor parking lots for autos, an expanded bus system to cover both perimeter and internal routes, and a central campus that enhances pedestrian and bicycle movement. With this goal in mind, it seems that a logical first step would be the removal of parking on one side of Cherry Street and Third Street. This step would allow adequate street width for two way traffic that is necessary to keep good circulation in the central campus. This step would also

allow buses and service and maintenance vehicles more room for maneuverability on those narrow streets. This brings up the suggestion for the second stage, the expansion of the bus system. The bus fleet needs to have several more vehicles, some of which could be small buses, in order to provide most frequent service and better coverage.

Some consideration should be given to providing more short term parking around campus. Likely spots would be the Student Center, and the "Hill" area.

In summary, campus plans and policies should be directed toward a perimeter road system for automobiles and an internal circulation system by other modes. As for specific items, it is recommended that:

SUMMARY OF RECOMMENDATIONS

1. Parking should be spread about in campus perimeter areas.

2. Extend Ferst Drive to a full loop around campus.

3. Expand the bus system to give more service and coverage to perimeter parking areas and internal campus buildings.

4. Provide better bicycle path and parking facilities.

5. Institute a student transportation fee rather than the present parking fee in order to make bus and bicycle improvements.

6. Provide good connections to future MARTA system (both bus and rail).

7. Remove parking from the west side of Cherry Street and the north side of Third Street.

8. Provide more short term parking around buildings such as the Student Center, Rich Computer Center, and the "Hill" area.

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APPENDIX I

Questionnaire

GEORGIA INSTITUTE OF TECHNOLOGY
ATLANTA, GEORGIA 30332

SCHOOL OF
VIL ENGINEERING

TELEPHONE
(404) 894-2235

Dear Friend of Georgia Tech:

A research study is being conducted by the School of Civil Engineering to determine travel patterns within the confines of the Georgia Tech campus. The results of this study, which will be used by the Office of Planning, should serve as a useful basis for the improvement of campus traffic circulation facilities. The study has been authorized by President Pettit.

Your cooperation and assistance is needed to insure the success of this study. Would you please complete this questionnaire and return it by campus mail or drop in the box on the first floor of the Student Center at your earliest convenience.

You do not have to sign this questionnaire.

Your help will be sincerely appreciated.

Very truly yours,

Donald O. Covault
Professor

DOC/lm

1. What is your affiliation with Tech? (9-1) Undergraduate Student ☐ 10-1; Graduate Student ☐ 10-2; Faculty or Staff ☐ 10-3; Other ☐ 10-4; What department? _____ 11,12

2. Where do you live? On Campus ☐ 13-1; 0-5 Miles From Tech ☐ 13-2; 6-10 Miles From Tech ☐ 13-3; More Than 10 Miles From Tech ☐

3. If you live off campus, how did you travel to the campus today? Drove an Automobile ☐ 14-1; Passenger in an Automobile ☐ 14-2; Motorcycle ☐ 14-3; Bus ☐ 14-4; Bicycle ☐ 14-5; Walking ☐ 14-6

4. If you drove an automobile to the campus today, where did you park? (Be as specific as possible) _____ 15,16

5. Which of the following modes of transportation do you have available for use on campus? You may check more than one block. (Walking and bus are assumed to be available to everyone.) Automobile ☐ 17-1; Motorcycle ☐ 18-1; Bicycle ☐ 19-1

In the following blanks please give a complete record of <u>each</u> trip you made beginning, ending, and within the campus on a single weekday starting with the trip from your place of residence to your first campus destination. Include trips to and from your car if you parked on campus, bus trips, walk trips, bicycle trips, motorcycle trips, and automobile trips.

Indicate the day of week reported: Monday ☐ 20-1; Tuesday ☐ 20-2; Wednesday ☐ 20-3; Thursday ☐ 20-4; Friday ☐ 20-5; Saturday ☐ 20-6

Where Did This Trip Begin? (Please indicate specific location, e.g. name of building)	Where Did This Trip End? (Please be specific)	What Was the Purpose of Trip?	What Was the Mode of Travel?	Time Trip Began
☐☐ 1. (21,22) (23,24)	☐☐ (25,26)	Class ☐ 1; Study ☐ 2; Meal ☐ 3; Recreation ☐ 4; School Business ☐ 5; Other ☐ 6 (27)	Walking ☐ 1; Car ☐ 2; Bus ☐ 3; Motorcycle ☐ 4; Bicycle ☐ 5 (28)	____ ☐ AM 1 ☐ PM 2 (29-32) (33)
☐☐ 2. (34,35) (36,37)	☐☐ (38,39)	Class ☐ 1; Study ☐ 2; Meal ☐ 3; Recreation ☐ 4; School Business ☐ 5; Other ☐ 6 (40)	Walking ☐ 1; Car ☐ 2; Bus ☐ 3; Motorcycle ☐ 4; Bicycle ☐ 5 (41)	____ ☐ AM 1 ☐ PM 2 (42-45) (46)
☐☐ 3. (47,48) (49,50)	☐☐ (51,52)	Class ☐ 1; Study ☐ 2; Meal ☐ 3; Recreation ☐ 4; School Business ☐ 5; Other ☐ 6 (53)	Walking ☐ 1; Car ☐ 2; Bus ☐ 3; Motorcycle ☐ 4; Bicycle ☐ 5 (54)	____ ☐ AM 1 ☐ PM 2 (55-58) (59)
☐☐ 4. (60,61) (62,63)	☐☐ (64,65)	Class ☐ 1; Study ☐ 2; Meal ☐ 3; Recreation ☐ 4; School Business ☐ 5; Other ☐ 6 (66)	Walking ☐ 1; Car ☐ 2; Bus ☐ 3; Motorcycle ☐ 4; Bicycle ☐ 5 (67)	____ ☐ AM 1 ☐ PM 2 (68-71) (72)

Where Did This Trip Begin? (Please indicate specific location, e.g. name of building)	Where Did This Trip End? (Please be specific)	What Was the Purpose of Trip?	What Was the Mode of Travel?	Time Trip Began
5. (9-2) (10,11) (12,13)	(14,15)	Class 1; Study 2; Meal 3; Recreation 4; School Business 5; Other 6 (16)	Walking 1; Car 2; Bus 3; Motorcycle 4; Bicycle 5 (17)	____ AM 1 PM 2 (18-21) (22)
6. (23,24) (25,26)	(27,28)	Class 1; Study 2; Meal 3; Recreation 4; School Business 5; Other 6 (29)	Walking 1; Car 2; Bus 3; Motorcycle 4; Bicycle 5 (30)	____ AM 1 PM 2 (31-34) (35)
7. (36,37) (38,39)	(40,41)	Class 1; Study 2; Meal 3; Recreation 4; School Business 5; Other 6 (42)	Walking 1; Car 2; Bus 3; Motorcycle 4; Bicycle 5 (43)	____ AM 1 PM 2 (44-47) (48)
8. (49,50) (51,52)	(53,54)	Class 1; Study 2; Meal 3; Recreation 4; School Business 5; Other 6 (55)	Walking 1; Car 2; Bus 3; Motorcycle 4; Bicycle 5 (56)	____ AM 1 PM 2 (57-60) (61)
9. (62,63) (64,65)	(66,67)	Class 1; Study 2; Meal 3; Recreation 4; School Business 5; Other 6 (68)	Walking 1; Car 2; Bus 3; Motorcycle 4; Bicycle 5 (69)	____ AM 1 PM 2 (70-73) (74)
10. (9-3) (10,11) (12,13)	(14,15)	Class 1; Study 2; Meal 3; Recreation 4; School Business 5; Other 6 (16)	Walking 1; Car 2; Bus 3; Motorcycle 4; Bicycle 5 (17)	____ AM 1 PM 2 (18-21) (22)
11. (23,24) (25,26)	(27,28)	Class 1; Study 2; Meal 3; Recreation 4; School Business 5; Other 6 (29)	Walking 1; Car 2; Bus 3; Motorcycle 4; Bicycle 5 (30)	____ AM 1 PM 2 (31-34) (35)
12. (36,37) (38,39)	(40,41)	Class 1; Study 2; Meal 3; Recreation 4; School Business 5; Other 6 (42)	Walking 1; Car 2; Bus 3; Motorcycle 4; Bicycle 5 (43)	____ AM 1 PM 2 (44-47) (48)

If you made more than twelve trips, check this box. 49-1

Enter any remarks or comments about transportation on the Tech campus in the space provided here: _____

(Continued on back)

CAMPUS MAIL
ONLY

RETURN TO:
TECH TRANSPORTATION SURVEY
C/O SCHOOL OF CIVIL ENGINEERING
ATTN. DR. DONALD O. COVAULT

REMARKS OR COMMENTS (CONTINUED):

TECH TRANSPORTATION SURVEY
SCHOOL OF CIVIL ENGINEERING

CAMPUS MAIL

APPENDIX II

Summary Program

This computer program was written to compile, summarize, and expand the data collected in questions 1 through 5 of the questionnaire (Appendix I) and the "day of the week" question. The questionnaire contains coding numbers which were used to keypunch the data onto computer cards to be used as input.

The results obtained from this program are in Appendix V, pages 64-66. The definition of variables used in the program is in Appendix IV.

```
00101      1*
00101      2*     C     ******.**.***.*******SUMMARY PROGRAM*********.********.*****************
00101      3*
00101      4*     C    THIS PROGRAM SUMMARIZES ANSWERS TO QUESTIONS 1 THROUGH 5 ON
00101      5*     C    QUESTIONNAIRES DISTRIBUTED IN THE GEORGIA TECH TRANSPORTATION SURVEY
00101      6*     C    IN JUNE, 1973
00101      7*
00101      8*           REAL NRESP,NSKL,NANS1,NANS2,NANS3,NANS4,NANS5,NANSD
00103      9*           REAL NUGRD,NGRD,NFS,ND1,ND2,ND3,ND4
00104     10*           REAL NDAUT,NPAUT,NDMOT,NPBUS,NDBIK,NPEDS,NOFFC,NTOFFC
00105     11*           REAL NAUT,NMOT,NBIK,NBUS,NWLK,NMON,NTUS,NWED,NTHR,NFRI,NSAT
00106     12*           INTEGER COL9,COL10,COL12,COL13,COL14,COL16,COL17,COL18,COL19,COL20
00107     13*           DIMENSION DEP(50),PDEP(50),PKN(65),PPK(65)
00110     14*           M=46
00111     15*           N=56
00112     16*           DO 15 I=1,M
00115     17*           DEP(I)=0
00116     18*           PDEP(I)=0
00117     19*        15 CONTINUE
00121     20*           DO 17 K=0,N
00124     21*           PKN(K)=0
00125     22*           PPK(K)=0
00126     23*        17 CONTINUE
00130     24*
00130     25*     C  ********.**.***.********.******.**************.********.*********************
00130     26*
00130     27*       100 FORMAT(8X,2I1,I2,2I1,I2,4I1,52X)
00131     28*       200 FORMAT(6X,8F3.1)
00132     29*       256 FORMAT(19X,6HPSKL1=,F7.2,1X,6HPSKL2=,F7.2,1X,6HPSKL3=,F7.2,1X,
00132     30*          16HPSKL4=,F7.2,1X,6HPSKL5=,F7.2,1X,6HPSKLD=,F7.2,///)
00133     31*       257 FORMAT(5X,4HPD1=,F7.2,3X,4HPD2=,F7.2,3X,4HPD3=,F7.2,3X,4HPD4=,
00133     32*          1F7.2,//)
00134     33*       258 FORMAT(5X,6HPUGRD=,F7.2,1X,5HPGRD=,F7.2,1X,4HPFS=,F7.2,1X,5HPOTH=,
00134     34*          1F7.2)
00135     35*       259 FORMAT(5X,4HND1=,F7.1,3X,4HND2=,F7.1,3X,4HND3=,F7.1,3X,4HND4=,
00135     36*          1F7.1)
00136     37*       266 FORMAT(5X,5HPMON=,F7.2,1X,5HPTUS=,F7.2,1X,5HPWED=,F7.2,1X,
00136     38*          15HPTHR=,F7.2,1X,5HPFRI=,F7.2,1X,5HPSAT=,F7.2)
00137     39*       267 FORMAT(5X,6HNDAUT=,F7.1,2X,6HNPAUT=,F7.1,2X,6HNDMOT=,F7.1,2X,
00137     40*          16HNPBUS=,F7.1,2X,6HNDBIK=,F7.1,2X,6HNPEDS=F7.1)
00140     41*       268 FORMAT(5X,6HPDAUT=,F7.2,2X,6HPPAUT=,F7.2,2X,6HPDMOT=,F7.2,2X,
00140     42*          16HPPBUS=,F7.2,2X,6HPDBIK=,F7.2,2X,6HPPEDS=,F7.2,2X,6HNOFFC=,F7.1)
00141     43*       269 FORMAT(5X,7HENDAUT=,F7.1,1X,7HENPAUT=,F7.1,1X,7HENDMOT=,F7.1,1X,
00141     44*          17HENPBUS=,F7.1,1X,7HENDBIK=,F7.1,1X,7HENPEDS=,F7.1,1X,7HNTOFFC=,
00141     45*          2F7.1,//)
00142     46*       276 FORMAT(15X,I3,3X,F7.1,3X,F7.2)
00143     47*       277 FORMAT(//,3X,38HNUMBER AND PERCENT PARKED IN EACH ZONE)
00144     48*       278 FORMAT(14X,4HZONE,6X,3HNO.,4X,7HPERCENT)
00145     49*       279 FORMAT(5X,5HPAUT=,F7.2,1X,5HPMOT=,F7.2,1X,5HPBIK=,F7.2,1X,
00145     50*          15HPBUS=,F7.2,1X,5HPWLK=,F7.2)
00146     51*       286 FORMAT(5X,6HENAUT=,F7.1,6HENMOT=,F7.1,6HENBIK=,F7.1,6HENBUS=,F7.1,
00146     52*          16HENWLK=,F7.1,//)
00147     53*       287 FORMAT(5X,5HNMON=,F7.1,1X,5HNTUS=,F7.1,1X,5HNWED=,F7.1,1X,
00147     54*          15HNTHR=,F7.1,1X,5HNFRI=,F7.1,1X,5HNSAT=,F7.1)
00150     55*       288 FORMAT(5X,41HNUMBER AND PERCENT OF RESPONDENTS BY DEPT)
00151     56*       289 FORMAT(14X,4HDEPT,6X,3HNO.,5X,7HPERCENT)
```

See Appendix IV For Definition Of Variables

```
00152     57*        300 FORMAT(6X,5F3.1)
00153     58*        400 FORMAT(6X,2I1)
00154     59*        500 FORMAT(5X,6HNRESP=,F7.1,1X,6HNANS1=,F7.1,1X,6HNANS2=,F7.1,1X,
00154     60*           16HNANS3=,F7.1,1X,6HNANS4=,F7.1,1X,6HNANS5=,F7.1,1X,6HNANSD=,F7.1)
00155     61*        520 FORMAT(19X,6HPANS1=,F7.2,1X,6HPANS2=,F7.2,1X,6HPANS3=,F7.2,1X,
00155     62*           16HPANS4=,F7.2,1X,6HPANS5=,F7.2,1X,6HPANSD=,F7.2)
00156     63*        540 FORMAT(//,5X,5HUGRD=,F7.1,2X,4HGRD=,F7.1,2X,3HFS=,F7.1,2X,
00156     64*           14HOTH=,F7.1)
00157     65*        550 FORMAT(5X,5HPPUG=,F7.1,2X,4HPPG=,F7.1,2X,5HPPFS=,F7.1,//)
00160     66*        560 FORMAT(15X,I3,3X,F7.1,3X,F6.2)
00161     67*        570 FORMAT(//,5X,5HNAUT=,F7.1,1X,5HNMOT=,F7.1,1X,5HNBIK=,F7.1,1X,
00161     68*           15HNBUS=,F7.1,1X,5HNWLK=,F7.1)
00162     69*
00162     70*     C  ********,********,********,********,********************,********,**********,**********
00162     71*
00162     72*           READ(5,200)NRESP,NANS1,NANS2,NANS3,NANS4,NANS5,NANSD,PANS1
00174     73*           READ(5,200)PANS2,PANS3,PANS4,PANS5,PANSD,PSKL1,PSKL2,PSKL3
00206     74*           READ(5,200)PSKL4,PSKL5,PSKLD,UGRD,GRD,FS,OTH,PUGRD
00220     75*           READ(5,200)PGRD,PFS,POTH,PPUG,PPG,PPFS,ND1,ND2
00232     76*           READ(5,200)ND3,ND4,PD1,PD2,PD3,PD4,NDAUT,NPAUT
00244     77*           READ(5,200)NDMOT,NPBUS,NDBIK,NPEDS,NOFFC,PDAUT,PPAUT,PDMOT
00256     78*           READ(5,200)PPBUS,PDBIK,PPEDS,ENDAUT,ENPAUT,ENDMOT,ENPBUS,ENDBIK
00270     79*           READ(5,200)ENPEDS,NAUT,NMOT,NBIK,NBUS,NWLK,PAUT,PMOT
00302     80*           READ(5,200)PBIK,PBUS,PWLK,ENAUT,ENMOT,ENBIK,ENBUS,ENWLK
00314     81*           READ(5,200)NMON,NTUS,NWED,NTHR,NFRI,NSAT,PMON,PTUS
00326     82*           READ(5,300)PWED,PTHR,PFRI,PSAT,TPK
00335     83*           READ(5,400)I,K
00341     84*
00341     85*     C  ********,********,********,********,********************,********,********** ********
00341     86*
00341     87*
00341     88*           10 READ(5,100)COL9,COL10,COL12,COL13,COL14,COL16,COL17,COL18,COL19,
00341     89*             1COL20
00355     90*
00355     91*           11 IF(COL9.EQ.5)GO TO 346
00357     92*              IF(COL9.EQ.1)GO TO 25
00361     93*           20 GO TO 10
00362     94*           25 NRESP=NRESP+1
00363     95*
00363     96*           30 IF(COL10.EQ.0)GO TO 50
00365     97*              NANS1=NANS1+1
00366     98*           32 IF(COL10.EQ.1)GO TO 40
00370     99*           33 IF(COL10.EQ.2)GO TO 41
00372    100*           34 IF(COL10.EQ.3)GO TO 42
00374    101*           35 IF(COL10.EQ.4)GO TO 43
00376    102*              GO TO 50
00377    103*           43 OTH=OTH+1
00400    104*              GO TO 50
00401    105*           40 UGRD=UGRD+1
00402    106*              GO TO 50
00403    107*           41 GRD=GRD+1
00404    108*              GO TO 50
00405    109*           42 FS=FS+1
00406    110*
00406    111*           50 DO 120 I=1,N
00411    112*              IF(COL12.EQ.I)GO TO 60
00413    113*           55 GO TO 120
```

```
00414    114*          60 DEP(I)=DEP(I)+1
00415    115*         120 CONTINUE
00417    116*
00417    117*         150 IF(COL13.EQ.0)GO TO 170
00421    118*             NANS2=NANS2+1
00422    119*         155 IF(COL13.EQ.1)GO TO 165
00424    120*         156 IF(COL13.EQ.2)GO TO 166
00426    121*         157 IF(COL13.EQ.3)GO TO 167
00430    122*         158 IF(COL13.EQ.4)GO TO 168
00432    123*             GO TO 170
00433    124*         165 ND1=ND1+1
00434    125*             GO TO 170
00435    126*         166 ND2=ND2+1
00436    127*             GO TO 170
00437    128*         167 ND3=ND3+1
00440    129*             GO TO 170
00441    130*         168 ND4=ND4+1
00442    131*
00442    132*         170 IF(COL14.EQ.0)GO TO 201
00444    133*             NANS3=NANS3+1
00445    134*         175 IF(COL14.EQ.1)GO TO 185
00447    135*         176 IF(COL14.EQ.2)GO TO 186
00451    136*         177 IF(COL14.EQ.3)GO TO 187
00453    137*         178 IF(COL14.EQ.4)GO TO 188
00455    138*         179 IF(COL14.EQ.5)GO TO 189
00457    139*         180 IF(COL14.EQ.6)GO TO 190
00461    140*             GO TO 201
00462    141*         185 NDAUT=NDAUT+1
00463    142*             GO TO 201
00464    143*         186 NPAUT=NPAUT+1
00465    144*             GO TO 201
00466    145*         187 NDMOT=NDMOT+1
00467    146*             GO TO 201
00470    147*         188 NPBUS=NPBUS+1
00471    148*             GO TO 201
00472    149*         189 NDBIK=NDBIK+1
00473    150*             GO TO 201
00474    151*         190 NPEDS=NPEDS+1
00475    152*
00475    153*         201 IF(COL16.EQ.0)GO TO 301
00477    154*             NANS4=NANS4+1
00500    155*         210 DO 295 K=1,N
00503    156*             IF(COL16.EQ.K)GO TO 230
00505    157*             GO TO 295
00506    158*         230 PKN(K)=PKN(K)+1
00507    159*         295 CONTINUE
00511    160*
00511    161*         301 IF(COL17.EQ.0.AND.COL18.EQ.0.AND.COL19.EQ.0)GO TO 320
00513    162*             NANS5=NANS5+1
00514    163*             NBLK=NRESP
00515    164*             NBUS=NRESP
00516    165*         305 IF(COL17.EQ.0)GO TO 310
00520    166*             NAUT=NAUT+1
00521    167*             GO TO 310
00522    168*
00522    169*         310 IF(COL18.EQ.0)GO TO 315
00524    170*             NMOT=NMOT+1
```

```
00525   171*            GO TO 315
00526   172*
00526   173*         315 IF(COL19.EQ.0)GO TO 320
00530   174*            NBIK=NBIK+1
00531   175*
00531   176*         320 IF(COL20.EQ.0)GO TO 345
00533   177*            NANSD=NANSD+1
00534   178*         321 IF(COL20.EQ.1)GO TO 331
00536   179*         322 IF(COL20.EQ.2)GO TO 332
00540   180*         323 IF(COL20.EQ.3)GO TO 333
00542   181*         324 IF(COL20.EQ.4)GO TO 334
00544   182*         325 IF(COL20.EQ.5)GO TO 335
00546   183*         326 IF(COL20.EQ.6)GO TO 336
00550   184*            GO TO 345
00551   185*         331 NMON=NMON+1
00552   186*            GO TO 345
00553   187*         332 NTUS=NTUS+1
00554   188*            GO TO 345
00555   189*         333 NWED=NWED+1
00556   190*            GO TO 345
00557   191*         334 NTHR=NTHR+1
00560   192*            GO TO 345
00561   193*         335 NFRI=NFRI+1
00562   194*            GO TO 345
00563   195*         336 NSAT=NSAT+1
00564   196*         345 CONTINUE
00565   197*            GO TO 10
00566   198*         346 CONTINUE
00567   199*
00567   200*      C  ********************************************************** ********
00567   201*
00567   202*      C     BEGIN OPERATIONS    **********************
00567   203*         350 WRITE(6,500)NRESP,NANS1,NANS2,NANS3,NANS4,NANS5,NANSD
00600   204*            PANS1=(NANS1/NRESP)*100
00601   205*            PANS2=(NANS2/NRESP)*100
00602   206*            PANS3=(NANS3/NRESP)*100
00603   207*            PANS4=(NANS4/NRESP)*100
00604   208*            PANS5=(NANS5/NRESP)*100
00605   209*            PANSD=(NANSD/NRESP)*100
00606   210*         370 WRITE(6,550)PANS1,PANS2,PANS3,PANS4,PANS5,PANSD
00616   211*
00616   212*            NSKL=4882
00617   213*            PSKL1=(NANS1/NSKL)*100
00620   214*            PSKL2=(NANS2/NSKL)*100
00621   215*            PSKL3=(NANS3/NSKL)*100
00622   216*            PSKL4=(NANS4/NSKL)*100
00623   217*            PSKL5=(NANS5/NSKL)*100
00624   218*            PSKLD=(NANSD/NSKL)*100
00625   219*         385 WRITE(6,2500)PSKL1,PSKL2,PSKL3,PSKL4,PSKL5,PSKLD
00635   220*
00635   221*      C  ********************************************************** ********
00635   222*
00635   223*            WRITE(6,2508)
00637   224*            WRITE(6,2509)
00641   225*            DO 405 I=1,M
00644   226*            PDEP(I)=(DEP(I)/NRESP)*100
00645   227*            WRITE(6,5500)I,DEP(I),PDEP(I)
```

```
00652    228*        405 CONTINUE
00654    229*
00654    230*        410 WRITE(6,500)UGRD,GRD,FS,OTH
00662    231*            PUGRD=(UGRD/NRESP)*100
00663    232*            PGRD=(GRD/NRESP)*100
00664    233*            PFS=(FS/NRESP)*100
00665    234*            POTH=(OTH/NRESP)*100
00666    235*        420 WRITE(6,258)PUGRD,PGRD,PFS,POTH
00674    236*            NUGRD=5839
00675    237*            NGRD=1302
00676    238*            NFS=1774
00677    239*            PPUG=(UGRD/NUGRD)*100
00700    240*            PPG=(GRD/NGRD)*100
00701    241*            PPFS=(FS/NFS)*100
00702    242*
00702    243*        450 WRITE(6,550)PPUG,PPG,PPFS
00707    244*
00707    245*        460 WRITE(6,259)ND1,ND2,ND3,ND4
00715    246*            PD1=(ND1/NRESP)*100
00716    247*            PD2=(ND2/NRESP)*100
00717    248*            PD3=(ND3/NRESP)*100
00720    249*            PD4=(ND4/NRESP)*100
00721    250*            WRITE(6,257)PD1,PD2,PD3,PD4
00727    251*
00727    252*        480 WRITE(6,267)NDAUT,NPAUT,NDMOT,NPBUS,NDBIK,NPEDS
00737    253*            NOFFC=ND2+ND3+ND4
00740    254*            PDAUT=(NDAUT/NOFFC)*100
00741    255*            PPAUT=(NPAUT/NOFFC)*100
00742    256*            PDMOT=(NDMOT/NOFFC)*100
00743    257*            PPBUS=(NPBUS/NOFFC)*100
00744    258*            PDBIK=(NDBIK/NOFFC)*100
00745    259*            PPEDS=(NPEDS/NOFFC)*100
00746    260*            WRITE(6,268)PDAUT,PPAUT,PDMOT,PPBUS,PDBIK,PPEDS,NOFFC
00757    261*
00757    262*            NTOFFC=4487
00760    263*        501 ENDAUT=(PDAUT*NTOFFC)/100
00761    264*            ENPAUT=(PPAUT*NTOFFC)/100
00762    265*            ENDMOT=(PDMOT*NTOFFC)/100
00763    266*            ENPBUS=(PPBUS*NTOFFC)/100
00764    267*            ENDBIK=(PDBIK*NTOFFC)/100
00765    268*            ENPEDS=(PPEDS*NTOFFC)/100
00766    269*            WRITE(6,269)ENDAUT,ENPAUT,ENDMOT,ENPBUS,ENDBIK,ENPEDS,NTOFFC
00777    270*
00777    271*      C  ********.****.***.*******.*******.***************.********.**********.******** ********
00777    272*
00777    273*            WRITE(6,277)
01001    274*            WRITE(6,276)
01003    275*            DO 535 K=1,N
01006    276*            TPK=TPK+PKN(K)
01007    277*        535 CONTINUE
01011    278*            DO 536 K=1,N
01014    279*            PPK(K)=(PKN(K)/TPK)*100
01015    280*            WRITE(6,276)K,PKN(K),PPK(K)
01042    281*        536 CONTINUE
01024    282*
01024    283*        541 WRITE(6,570)NAUT,NMOT,NBIK,NBUS,NWLK
01033    284*            PAUT=(NAUT/NRESP)*100
```

```
01034    285*            PMOT=(NMOT/NRESP)*100
01035    286*            PBIK=(NBIK/NRESP)*100
01036    287*            PBUS=(NBUS/NRESP)*100
01037    288*            PWLK=(NWLK/NRESP)*100
01040    289*        551 WRITE(6,279)PAUT,PMOT,PBIK,PBUS,PWLK
01047    290*
01047    291*            ENAUT=(PAUT*NSKL)/100
01050    292*            ENMOT=(PMOT*NSKL)/100
01051    293*            ENBIK=(PBIK*NSKL)/100
01052    294*            ENBUS=(PBUS*NSKL)/100
01053    295*            ENWLK=(PWLK*NSKL)/100
01054    296*            WRITE(6,286)ENAUT,ENMOT,ENBIK,ENBUS,ENWLK
01063    297*
01063    298*        561 WRITE(6,287)NMON,NTUS,NWED,NTHR,NFRI,NSAT
01073    299*            PMON=(NMON/NRESP)*100
01074    300*            PTUS=(NTUS/NRESP)*100
01075    301*            PWED=(NWED/NRESP)*100
01076    302*            PTHR=(NTHR/NRESP)*100
01077    303*            PFRI=(NFRI/NRESP)*100
01100    304*            PSAT=(NSAT/NRESP)*100
01101    305*        571 WRITE(6,266)PMON,PTUS,PWED,PTHR,PFRI,PSAT
01111    306*
01111    307*      C  ********,********,********,********,**************,********** ********
01111    308*
01111    309*      C   END OF SUMMARY PROGRAM
01111    310*            STOP
01112    311*            END
```

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END OF COMPILATION: NO DIAGNOSTICS.

@XQT
RMAP-6-08/17-15:03

```
ADDRESS LIMITS    001000 012424     040000 045232
STARTING ADDRESS  010635

WORDS DECIMAL      4885 IBANK        2715 DBANK
```

NSWTCH/FOR68-2S	1	001000 001024			
NRBLK1/FOR68	1	001025 001047			
NRWNDS/FOR68-2R	1	001050 001132	2	040000	040011
NWEPS/FOR68-2S	1	001133 001341	2	040012	040031
NBDCV1/FOR64	1	001342 001467	2	040032	040074

APPENDIX III

Trips Program

This program was written to compile, summarise, and expand the data obtained on the questionnaire (appendix I) relating to the trips made by the respondent. Certain data compiled by the Summary Program was used as input to the Trips Program, such as the number of respondents, and the number of respondents by school affiliation. Otherwise, this program uses the same data deck used by the Summary Program.

The results of this program contain summaries of trips by time, purpose, mode, day and school affiliation, and most importantly, there are five trip tables showing the number of trips to and from each of 56 zones by each of the different modes of travel on campus. These results are presented in Appendix V, pages 67-93. The difinition of variables used in this program is in Appendix IV.

Both this program and the Summary Program are written in FORTRAN IV language.

```
0000 I 035351 COLF      0000 I 035366 COLG      0000 I 021470 COL10     0000 I 027360 COL20     0000 I 035403 COL49
0000 I 021467 COL9      0000 R 065114 ETRIP     0000 R 130236 FS        0000 R 130235 GRD       0000 I 130240 J
0000 I 130321 JPT       0000 I 130320 JPW       0000 I 130322 K         0000 I 130316 L         0000 R 000005 MLT
0000 I 130241 N         0000 R 000013 NANS12    0000 R 000012 NFS       0000 R 000011 NGRD      0000 R 000006 NRESP
0000 R 000007 NSKL      0000 R 000015 NT        0000 R 000001 NTFS      0000 R 000004 NTFSSK    0000 R 000000 NTS
0000 R 000002 NTSK      0000 R 000003 NTSSK     0000 R 000014 NTTOT     0000 R 000010 NUGRD     0000 R 130237 OTH
0000 R 130262 OTHT      0000 R 042314 PAMT      0000 R 130264 PCLST     0000 R 130266 PMLT      0000 R 037752 PMT
0000 R 130271 POTHT     0000 R 044574 PPMT      0000 R 130267 PRECT     0000 R 130270 PSBT      0000 R 130265 PSTYT
0000 R 130304 PTBIK     0000 R 130302 PTBUS     0000 R 130301 PTCAR     0000 R 130254 PTFRI     0000 R 130250 PTMON
0000 R 130303 PTMOT     0000 R 056074 PTRIP     0000 R 130255 PTSAT     0000 R 130253 PTTHR     0000 R 130251 PTTUS
0000 R 130252 PTWED     0000 R 130300 PTWLK     0000 R 130306 PUNKND    0000 R 130315 PUNKNM    0000 R 130313 PUNKNP
0000 R 130272 PUNKNT    0000 R 130260 RECT      0000 R 130261 SBT       0000 R 130257 STYT      0000 R 130277 TBIK
0000 R 130275 TBUS      0000 R 130274 TCAR      0000 R 130246 TFRI      0000 R 130242 TMON      0000 R 130276 TMOT
0000 R 047054 TRIP      0000 R 130247 TSAT      0000 R 130245 TTHR      0000 R 130243 TTUS      0000 R 130244 TWED
0000 R 130273 TWLK      0000 I 035406 U         0000 R 130234 UGRD      0000 R 130317 UNKNAF    0000 R 130305 UNKND
0000 R 130314 UNKNM     0000 R 130312 UNKNP     0000 R 130263 UNKNT     0000 I 035407 V         0000 R 074134 WLKTRP
0000 I 021465 X         0000 I 021466 Y         0000 I 035405 Z
```

```
00101      1*
00101      2*      C     ************************TRIPS PROGRAM*************************************
00101      3*
00101      4*      C     THIS PROGRAM SUMMARIZES TRIP DATA OBTAINED ON QUESTIONNAIRES DISTRIBUTED
00101      5*      C     IN THE GEORGIA TECH TRANSPORTATION SURVEY IN JUNE, 1973
00101      6*
00101      7*              REAL    NTS,NTFS,NTSK,NTSSK,NTFSSK,MLT,NRESP,NSKL,NUGRD,NGRD,NFS
00103      8*              REAL NANS12,NTTOT,NT(3000,3)
00104      9*              INTEGER X,Y,COL9,COL10,COL20,COLA(13),COLB(13),COLC(13)
00105     10*              INTEGER COLD(13),COLE(13),COLF(13),COLG(13)
00106     11*              INTEGER COL49,C,Z,U,V
00107     12*              DIMENSION AMT(1250),PMT(1250),PAMT(1200),PPMT(1200),COL10(3000)
00110     13*              DIMENSION TRIP(60,60),PTRIP(60,60),ETRIP(60,60),COL20(3000)
00111     14*              DIMENSION WLKTRP(60,60),CARTRP(60,60),BIKTRP(60,60),BUSTRP(60,60)
00112     15*              NSKL=8882
00113     16*              NRESP=1828
00114     17*              UGRD=1091
00115     18*              GRD=277
00116     19*              FS=452
00117     20*              OTH=5
00120     21*              NUGRD=5839
00121     22*              NGRD=1302
00122     23*              NFS=1774
00123     24*              DO 602 J=1,1200
00126     25*              AMT(J)=0
00127     26*              PMT(J)=0
00130     27*          602 CONTINUE
00132     28*              DO 603 N=0,1200,100
00135     29*              AMT(N)=0
00136     30*              PMT(N)=0
00137     31*          603 CONTINUE
00141     32*              DO 605 X=0,56
00144     33*              DO 604 Y=0,56
00147     34*              TRIP(X,Y)=0
00150     35*              BUSTRP(X,Y)=0
00151     36*              BIKTRP(X,Y)=0
```

See Appendix IV For Definition Of Variables

```
00152    37*           CARTRP(X,Y)=0
00153    38*           WLKTRP(X,Y)=0
00154    39*       604 CONTINUE
00156    40*       605 CONTINUE
00160    41*           READ(5,990)NTSSK,NTFSSK,TMON,TTUS,TWED,TTHR,TFRI,TSAT
00172    42*           READ(5,990)PTMON,PTTUS,PTWED,PTTHR,PTFRI,PTSAT,CLST,STYT
00204    43*           READ(5,990)MLT,RECT,SBT,OTHT,UNKNT,PCLST,PSTYT,PMLT
00216    44*           READ(5,990)PRECT,PSBT,POTHT,PUNKNT,TWLK,TCAR,TBUS,TMOT
00230    45*           READ(5,990)TBIK,PTWLK,PTCAR,PTBUS,PTMOT,PTBIK,UNKND,PUNKND
00242    46*           READ(5,995)NTTOT,AVNT,NTS,AVNTS,NTFS,AVNTFS,NTSK
00253    47*           READ(5,991)UNKNP,PUNKNP,UNKNM,PUNKNM
00261    48*           READ(5,992)N,J,X,Y,C,Z
00271    49*
00271    50*       950 FORMAT(45X,31HBIKETRIP(X,Y) MATRIX - ALL DAYS,/)
00272    51*       951 FORMAT(3X,20I5)
00273    52*       952 FORMAT(1X,I2,20F5.1)
00274    53*       953 FORMAT(3X,20F5.1)
00275    54*       954 FORMAT(3X,20F5.1,/)
00276    55*       955 FORMAT(24X,3HAMT,3X,4HPAMT,9X,3HPMT,3X,4HPPMT)
00277    56*       960 FORMAT(5X,19HERROR IN SUBPROGRAM)
00300    57*       961 FORMAT(2X,6HPTMON=,F6.1,1X,6HPTTUS=,F6.1,1X,6HPTWED=,F6.1,1X,
00300    58*          16HPTTHR=,F6.1,1X,6HPTFRI=,F6.1,1X,6HPTSAT=,F6.1,1X,7HPUNKND=,F6.1,
00300    59*          2//)
00301    60*       962 FORMAT(3X,5HCLST=,F7.1,1X,5HSTYT=,F7.1,1X,4HMLT=,F7.1,1X,
00301    61*          15HRECT=,F7.1,1X,4HSBT=,F7.1,1X,5HOTHT=,F7.1,1X,6HUNKNP=,F7.1)
00302    62*       963 FORMAT(2X,6HPCLST=,F6.1,1X,6HPSTYT=,F6.1,1X,5HPMLT=,F6.1,1X,
00302    63*          16HPRECT=,F6.1,1X,5HPSBT=,F6.1,1X,6HPOTHT=,F6.1,1X,7HPUNKNP=,
00302    64*          2F6.1,//)
00303    65*       964 FORMAT(2X,6HPTWLK=,F6.1,1X,6HPTCAR=,F6.1,1X,6HPTBUS=,F6.1,1X,
00303    66*          16HPTMOT=,F6.1,1X,6HPTBIK=,F6.1,1X,7HPUNKNM=,F6.1,//)
00304    67*       965 FORMAT(10X,29HDISTRIBUTION OF TRIPS BY HOUR,/)
00305    68*       966 FORMAT(///,30X,39HTRIP(X,Y) MATRIX - ALL MODES - ALL DAYS,/)
00306    69*       967 FORMAT(45X,31HWALKTRIP(X,Y) MATRIX - ALL DAYS,/)
00307    70*       968 FORMAT(45X,30HBUSTRIP(X,Y) MATRIX - ALL DAYS,/)
00310    71*       969 FORMAT(45X,30HCARTRIP(X,Y) MATRIX - ALL DAYS,/)
00311    72*       970 FORMAT(3X,18I6)
00312    73*       971 FORMAT(1X,I2,18F6.1)
00313    74*       972 FORMAT(3X,18F6.1,//)
00314    75*       975 FORMAT(3X,19F6.1)
00315    76*       976 FORMAT(3X,18F6.1)
00316    77*       977 FORMAT(6X,5HNTSK=,F8.1,8H  NTSSK=,F8.1,9H  NTFSSK=,F8.1,//)
00317    78*       980 FORMAT(5X,6HNTTOT=,F8.1,6H  NTS=,F8.1,7H  NTFS=,F8.1,
00317    79*          19H  UNKNAF=,F8.1)
00320    80*       981 FORMAT(3X,5HTMON=,F7.1,1X,5HTTUS=,F7.1,1X,5HTWED=,F7.1,1X,
00320    81*          15HTTHR=,F7.1,1X,5HTFRI=,F7.1,1X,5HTSAT=,F7.1,1X,6HUNKND=,F7.1)
00321    82*       982 FORMAT(3X,5HTWLK=,F7.1,1X,5HTCAR=,F7.1,1X,5HTBUS=,F7.1,1X,
00321    83*          15HTMOT=,F7.1,1X,5HTBIK=,F7.1,1X,6HUNKNM=,F7.1)
00322    84*       983 FORMAT(10X,I4,1X,I4,2F7.1,5X,2F7.1)
00323    85*       984 FORMAT(3X,19I6)
00324    86*       985 FORMAT(1X,I2,19F6.1)
00325    87*       986 FORMAT(3X,19F6.1,/)
00326    88*       989 FORMAT(5X,6HUNKNT=,F7.1,1X,7HPUNKNT=,F7.1,//)
00327    89*       990 FORMAT(10X,8F3.1)
00330    90*       991 FORMAT(10X,4F3.1)
00331    91*       992 FORMAT(10X,6I1)
00332    92*       993 FORMAT(I4,4X,I1,I1,9X,I1,4(3I2,2I1,I4,I1))
00333    93*       994 FORMAT(10X,21HERROR IN READING CUL9)
```

```
00334     94*        995 FORMAT(10X,7F3.1)
00335     95*        996 FORMAT(I4,4X,I1,5(3I2,2I1,I4,I1))
00336     96*        997 FORMAT(I4,4X,I1,3(3I2,2I1,I4,I1),I1)
00337     97*        999 FORMAT(6X,5HAVNT=,F8.2,8H  AVNTS=,F8.2,9H  AVNTFS=,F8.2)
00340     98*
00340     99*      C ***********************************************************************
00340    100*
00340    101*      C     BEGIN MAIN PROGRAM
00340    102*        615 READ(5,993)Z,COL9,COL10(Z),COL20(Z),(COLA(L),COLB(L),COLC(L),
00340    103*           1COLD(L),COLE(L),COLF(L),COLG(L),L=1,4)
00360    104*        616 IF(COL9.EQ.1)GO TO 617
00362    105*            GO TO 701
00363    106*        617 C=1
00364    107*            NT(Z,C)=0
00365    108*        620 GO TO 650
00366    109*        701 READ(5,996)Z,COL9,(COLA(L),COLB(L),COLC(L),COLD(L),COLE(L),
00366    110*           1COLF(L),COLG(L),L=5,9)
00404    111*        625 IF(COL9.EQ.2)GO TO 626
00406    112*            GO TO 751
00407    113*        626 C=2
00410    114*            NT(Z,C)=0
00411    115*        630 GO TO 650
00412    116*        751 READ(5,997)Z,COL9,(COLA(L),COLB(L),COLC(L),COLD(L),COLE(L),
00412    117*           1COLF(L),COLG(L),L=10,12),COL49
00431    118*        631 IF(COL9.EQ.3)GO TO 632
00433    119*        637 IF(COL9.EQ.5)GO TO 850
00435    120*            GO TO 639
00436    121*        632 C=3
00437    122*            NT(Z,C)=0
00440    123*        635 GO TO 650
00441    124*
00441    125*      C     WRITE ERROR MESSAGE IF DATA CARDS ARE NOT IN ORDER
00441    126*        639 WRITE(6,994)
00443    127*            GO TO 615
00444    128*
00444    129*      C     END OF MAIN PROGRAM
00444    130*
00444    131*      C ***********************************************************************
00444    132*
00444    133*      C    BEGINNING OF SUBPROGRAM TRPSUM      ***********************************
00444    134*        650 CONTINUE
00445    135*            IF(COL9.EQ.1)GO TO 656
00447    136*            IF(COL9.EQ.2)GO TO 657
00451    137*            IF(COL9.EQ.3)GO TO 658
00453    138*            WRITE(6,960)
00455    139*        656 C=1
00456    140*        001 U=1
00457    141*            V=4
00460    142*            GO TO 010
00461    143*        657 C=2
00462    144*        002 U=5
00463    145*            V=9
00464    146*            GO TO 010
00465    147*        658 C=3
00466    148*        003 U=10
00467    149*            V=12
00470    150*            GO TO 010
```

```
00471    151*
00471    152*     C      BEGINNING OF DO LOOP     ******
00471    153*
00471    154*       010 DO 695 L=U,V
00474    155*       660 IF(COLB(L).EQ.0.AND.COLC(L).EQ.0.AND.COLD(L).EQ.0.AND.
00474    156*          1COLE(L).EQ.0)GO TO 695
00476    157*           NT(Z,C)=NT(Z,C)+1
00477    158*           X=COLB(L)
00500    159*           Y=COLC(L)
00501    160*           TRIP(X,Y)=TRIP(X,Y)+1
00502    161*           IF(COLD(L).EQ.1)GO TO 661
00504    162*           IF(COLD(L).EQ.2)GO TO 662
00506    163*           IF(COLD(L).EQ.3)GO TO 663
00510    164*           IF(COLD(L).EQ.4)GO TO 664
00512    165*           IF(COLD(L).EQ.5)GO TO 665
00514    166*           IF(COLD(L).EQ.6)GO TO 666
00516    167*           IF(COLD(L).EQ.0)GO TO 667
00520    168*       661 CLST=CLST+1
00521    169*           GO TO 670
00522    170*       662 STYT=STYT+1
00523    171*           GO TO 670
00524    172*       663 MLT=MLT+1
00525    173*           GO TO 670
00526    174*       664 RECT=RECT+1
00527    175*           GO TO 670
00530    176*       665 SBT=SBT+1
00531    177*           GO TO 670
00532    178*       666 OTHT=OTHT+1
00533    179*           GO TO 670
00534    180*       667 UNKNP=UNKNP+1
00535    181*       670 IF(COLE(L).EQ.1)GO TO 671
00537    182*           IF(COLE(L).EQ.2)GO TO 672
00541    183*           IF(COLE(L).EQ.3)GO TO 673
00543    184*           IF(COLE(L).EQ.4)GO TO 674
00545    185*           IF(COLE(L).EQ.5)GO TO 675
00547    186*           IF(COLE(L).EQ.0)GO TO 676
00551    187*       671 TWLK=TWLK+1
00552    188*           CALL WKTRIP(COLB,COLC,WLKTRP,L,X,Y)
00553    189*           GO TO 680
00554    190*       672 TCAR=TCAR+1
00555    191*           CALL CRTRIP(COLB,COLC,CARTRP,L,X,Y)
00556    192*           GO TO 680
00557    193*       673 TBUS=TBUS+1
00560    194*           CALL BSTRIP(COLB,COLC,BUSTRP,L,X,Y)
00561    195*           GO TO 680
00562    196*       674 TMOT=TMOT+1
00563    197*           GO TO 680
00564    198*       675 TBIK=TBIK+1
00565    199*           CALL BKTRIP(COLB,COLC,BIKTRP,L,X,Y)
00566    200*           GO TO 680
00567    201*       676 UNKNM=UNKNM+1
00570    202*       680 CONTINUE
00571    203*           U=COLF(L)
00572    204*           IF(COLG(L).EQ.1)GO TO 681
00574    205*           IF(COLG(L).EQ.2)GO TO 682
00576    206*           UNKNT=UNKNT+1
00577    207*           GO TO 695
```

```
00600   208*        681 AMT(J)=AMT(J)+1
00601   209*            GO TO 695
00602   210*        682 PMT(J)=PMT(J)+1
00603   211*            GO TO 695
00604   212*        695 CONTINUE
00606   213*
00606   214*      C     END OF DO LOOP   ********
00606   215*
00606   216*        700 IF(COL10(Z).EQ.1.OR.COL10(Z).EQ.2)GO TO 709
00610   217*            IF(COL10(Z).EQ.3)GO TO 710
00612   218*            UNKNAF=UNKNAF+NT(Z,C)
00613   219*            GO TO 718
00614   220*        709 NTS=NTS+NT(Z,C)
00615   221*            GO TO 718
00616   222*        710 NTFS=NTFS+NT(Z,C)
00617   223*        718 IF(COL20(Z).EQ.1)GO TO 711
00621   224*            IF(COL20(Z).EQ.2)GO TO 712
00623   225*            IF(COL20(Z).EQ.3)GO TO 713
00625   226*            IF(COL20(Z).EQ.4)GO TO 714
00627   227*            IF(COL20(Z).EQ.5)GO TO 715
00631   228*            IF(COL20(Z).EQ.6)GO TO 716
00633   229*            IF(COL20(Z).EQ.0)GO TO 717
00635   230*            GO TO 720
00636   231*        711 TMON=TMON+NT(Z,C)
00637   232*            GO TO 720
00640   233*        712 TTUS=TTUS+NT(Z,C)
00641   234*            GO TO 720
00642   235*        713 TWED=TWED+NT(Z,C)
00643   236*            GO TO 720
00644   237*        714 TTHR=TTHR+NT(Z,C)
00645   238*            GO TO 720
00646   239*        715 TFRI=TFRI+NT(Z,C)
00647   240*            GO TO 720
00650   241*        716 TSAT=TSAT+NT(Z,C)
00651   242*            GO TO 720
00652   243*        717 UNKND=UNKND+NT(Z,C)
00653   244*        720 CONTINUE
00654   245*            IF(COL9.EQ.3)GO TO 723
00656   246*            GO TO 725
00657   247*        723 IF(COL49.EQ.1)GO TO 721
00661   248*            GO TO 725
00662   249*        721 NANS12=NANS12+1
00663   250*        725 NTTOT=NTTOT+NT(Z,C)
00664   251*            IF(COL9.EQ.1)GO TO 615
00666   252*            IF(COL9.EQ.2)GO TO 701
00670   253*            IF(COL9.EQ.3)GO TO 751
00670   254*      C     END OF SUBPROGRAM TRPSUM          ***************************
00672   255*
00672   256*      C ***************************************************************
00672   257*
00672   258*      C     BEGINNING OF OPERATIONS
00672   259*        850 WRITE(6,980)NTTOT,NTS,NTFS,UNKNAF
00700   260*            AVNT=NTTOT/NRESP
00701   261*            AVNTS=NTS/(UGRD+GRD)
00702   262*            AVNTFS=NTFS/FS
00703   263*            WRITE(6,999)AVNT,AVNTS,AVNTFS
00710   264*        860 NTSK=NSKL*AVNT
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00711   265*            NTSSK=AVNTS*(NUGRD+NGRD)
00712   266*            NTFSSK=AVNTFS*NFS
00713   267*            WRITE(6,977)NTSK,NTSSK,NTFSSK
00720   268*
00720   269*      870   WRITE(6,981)TMON,TTUS,TWED,TTHR,TFRI,TSAT,UNKND
00731   270*            PTMON=(TMON/NTTOT)*100
00732   271*            PTTUS=(TTUS/NTTOT)*100
00733   272*            PTWED=(TWED/NTTOT)*100
00734   273*            PTTHR=(TTHR/NTTOT)*100
00735   274*            PTFRI=(TFRI/NTTOT)*100
00736   275*            PTSAT=(TSAT/NTTOT)*100
00737   276*            PUNKND=(UNKND/NTTOT)*100
00740   277*            WRITE(6,961)PTMON,PTTUS,PTWED,PTTHR,PTFRI,PTSAT,PUNKND
00751   278*
00751   279*      880   WRITE(6,962)CLST,STYT,MLT,RECT,SBT,OTHT,UNKNP
00762   280*            PCLST=(CLST/NTTOT)*100
00763   281*            PSTYT=(STYT/NTTOT)*100
00764   282*            PMLT=(MLT/NTTOT)*100
00765   283*            PRECT=(RECT/NTTOT)*100
00766   284*            PSBT=(SBT/NTTOT)*100
00767   285*            POTHT=(OTHT/NTTOT)*100
00770   286*            PUNKNP=(UNKNP/NTTOT)*100
00771   287*            WRITE(6,963)PCLST,PSTYT,PMLT,PRECT,PSBT,POTHT,PUNKNP
01002   288*
01002   289*      890   WRITE(6,982)TWLK,TCAR,TBUS,TMOT,TBIK,UNKNM
01012   290*            PTWLK=(TWLK/NTTOT)*100
01013   291*            PTCAR=(TCAR/NTTOT)*100
01014   292*            PTBUS=(TBUS/NTTOT)*100
01015   293*            PTMOT=(TMOT/NTTOT)*100
01016   294*            PTBIK=(TBIK/NTTOT)*100
01017   295*            PUNKNM=(UNKNM/NTTOT)*100
01020   296*            WRITE(6,964)PTWLK,PTCAR,PTBUS,PTMOT,PTBIK,PUNKNM
01030   297*
01030   298*            DO 027 J=1,1200,3
01033   299*            JPW=J+1
01034   300*            JPT=J+2
01035   301*            DO 028 N=0,1200,100
01040   302*            K=N+100
01041   303*            IF(J.GT.N.AND.J.LE.K)GO TO 031
01043   304*            GO TO 028
01044   305*      031   AMT(N)=AMT(N)+AMT(J)+AMT(JPW)+AMT(JPT)
01045   306*            PMT(N)=PMT(N)+PMT(J)+PMT(JPW)+PMT(JPT)
01046   307*            GO TO 027
01047   308*      028   CONTINUE
01051   309*      027   CONTINUE
01053   310*
01053   311*            PUNKNT=(UNKNT/NTTOT)*100
01054   312*            WRITE(6,989)UNKNT,PUNKNT
01060   313*            WRITE(6,965)
01062   314*            WRITE(6,955)
01064   315*            DO 895 N=0,1200,100
01067   316*            PAMT(N)=(AMT(N)/NTTOT)*100
01070   317*            PPMT(N)=(PMT(N)/NTTOT)*100
01071   318*            K=N+100
01072   319*
01072   320*      895   WRITE(6,983)N,K,AMT(N),PAMT(N),PMT(N),PPMT(N)
01103   321*            DO 902 X=0,55
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01106    322*          DO 901 Y=0,56
01111    323*          PTRIP(X,Y)=(TRIP(X,Y)/NTTOT)*100
01112    324*          ETRIP(X,Y)=TRIP(X,Y)*(NSKL/NRESP)
01113    325*        901 CONTINUE
01115    326*        902 CONTINUE
01117    327*          WRITE(6,966)
01121    328*
01121    329*     C    BEGIN WRITTING TRIP MATRICES
01121    330*
01121    331*        900 WRITE(6,984)(Y,Y=0,18)
01127    332*          DO 904 X=0,56
01132    333*          WRITE(6,985)X,(TRIP(X,Y),Y=0,18)
01141    334*          WRITE(6,975)(PTRIP(X,Y),Y=0,18)
01147    335*          WRITE(6,986)(ETRIP(X,Y),Y=0,18)
01155    336*        904 CONTINUE
01157    337*          WRITE(6,951)(Y,Y=19,38)
01165    338*          DO 905 X=0,56
01170    339*          WRITE(6,952)X,(TRIP(X,Y),Y=19,38)
01177    340*          WRITE(6,953)(PTRIP(X,Y),Y=19,38)
01205    341*          WRITE(6,954)(ETRIP(X,Y),Y=19,38)
01213    342*        905 CONTINUE
01215    343*          WRITE(6,970)(Y,Y=39,56)
01223    344*          DO 903 X=0,56
01226    345*          WRITE(6,971)X,(TRIP(X,Y),Y=39,56)
01235    346*          WRITE(6,976)(PTRIP(X,Y),Y=39,56)
01243    347*          WRITE(6,972)(ETRIP(X,Y),Y=39,56)
01251    348*        903 CONTINUE
01253    349*
01253    350*          WRITE(6,967)
01255    351*          WRITE(6,984)(Y,Y=0,18)
01263    352*          DO 922 X=0,56
01266    353*          WRITE(6,985)X,(WLKTRP(X,Y),Y=0,18)
01275    354*        922 CONTINUE
01277    355*          WRITE(6,951)(Y,Y=19,38)
01305    356*          DO 923 X=0,56
01310    357*          WRITE(6,952)X,(WLKTRP(X,Y),Y=19,38)
01317    358*        923 CONTINUE
01321    359*          WRITE(6,970)(Y,Y=39,56)
01327    360*          DO 924 X=0,56
01332    361*          WRITE(6,971)X,(WLKTRP(X,Y),Y=39,56)
01341    362*        924 CONTINUE
01343    363*          WRITE(6,968)
01345    364*
01345    365*        912 WRITE(6,984)(Y,Y=0,18)
01353    366*          DO 913 X=0,56
01356    367*          WRITE(6,985)X,(BUSTRP(X,Y),Y=0,18)
01365    368*        913 CONTINUE
01367    369*          WRITE(6,951)(Y,Y=19,38)
01375    370*          DO 914 X=0,56
01400    371*          WRITE(6,952)X,(BUSTRP(X,Y),Y=19,38)
01407    372*        914 CONTINUE
01411    373*          WRITE(6,970)(Y,Y=39,56)
01417    374*          DO 915 X=0,56
01422    375*          WRITE(6,971)X,(BUSTRP(X,Y),Y=39,56)
01431    376*        915 CONTINUE
01433    377*
01433    378*          WRITE(6,969)
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01435    379*
01435    380*           WRITE(6,984)(Y,Y=0,18)
01443    381*           DO 919 X=0,56
01446    382*           WRITE(6,985)X,(CARTRP(X,Y),Y=0,18)
01455    383*       919 CONTINUE
01457    384*           WRITE(6,951)(Y,Y=19,38)
01465    385*           DO 920 X=0,56
01470    386*           WRITE(6,952)X,(CARTRP(X,Y),Y=19,38)
01477    387*       920 CONTINUE
01501    388*           WRITE(6,970)(Y,Y=39,56)
01507    389*           DO 921 X=0,56
01512    390*           WRITE(6,971)X,(CARTRP(X,Y),Y=39,56)
01521    391*       921 CONTINUE
01523    392*
01523    393*           WRITE(6,950)
01525    394*
01525    395*           WRITE(6,984)(Y,Y=0,18)
01533    396*           DO 916 X=0,56
01536    397*           WRITE(6,985)X,(BIKTRP(X,Y),Y=0,18)
01545    398*       916 CONTINUE
01547    399*           WRITE(6,951)(Y,Y=19,38)
01555    400*           DO 917 X=0,56
01560    401*           WRITE(6,952)X,(BIKTRP(X,Y),Y=19,38)
01567    402*       917 CONTINUE
01571    403*           WRITE(6,970)(Y,Y=39,56)
01577    404*           DO 918 X=0,56
01602    405*           WRITE(6,971)X,(BIKTRP(X,Y),Y=39,56)
01611    406*       918 CONTINUE
01613    407*
01613    408*       910 CONTINUE
01614    409*
01614    410*
01614    411*     C  END OF TRIP ANALYSIS PROGRAM
01614    412*           STOP
01615    413*           END

        END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,IS SUB1
FOR S11D-09/04/73-17:36:45 (,0)

   SUBROUTINE WKTRIP    ENTRY POINT 000033

   STORAGE USED: CODE(1) 000043; DATA(0) 000010; BLANK COMMON(2) 000000

   EXTERNAL REFERENCES (BLOCK, NAME)

    0003   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0000   000001 INJP$


00101      1*            SUBROUTINE WKTRIP(COLB,COLC,WLKTRP,L,X,Y)
00103      2*            DIMENSION COLB(13),COLC(13),WLKTRP(60,60)
00104      3*            INTEGER COLB,COLC,X,Y
00105      4*            X=COLB(L)
00106      5*            Y=COLC(L)
00107      6*            WLKTRP(X,Y)=WLKTRP(X,Y)+1
00110      7*            RETURN
00111      8*            END

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,IS SUB2
FOR S11D-09/04/73-17:36:49 (,0)

   SUBROUTINE CRTRIP    ENTRY POINT 000033

   STORAGE USED: CODE(1) 000043; DATA(0) 000010; BLANK COMMON(2) 000000

   EXTERNAL REFERENCES (BLOCK, NAME)

    0003   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0000   000001 INJP$


00101      1*            SUBROUTINE CRTRIP(COLB,COLC,CARTRP,L,X,Y)
00103      2*            DIMENSION COLB(13),COLC(13),CARTRP(60,60)
00104      3*            INTEGER COLB,COLC,X,Y
00105      4*            X=COLB(L)
00106      5*            Y=COLC(L)
00107      6*            CARTRP(X,Y)=CARTRP(X,Y)+1
00110      7*            RETURN
00111      8*            END

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,IS SUB3
FOR S11D-09/04/73-17:36:54 (.0)

   SUBROUTINE BKTRIP    ENTRY POINT 000033

   STORAGE USED: CODE(1) 000043; DATA(0) 000010; BLANK COMMON(2) 000000

   EXTERNAL REFERENCES (BLOCK, NAME)

    0003   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0000   000001 INJP$


00101      1*            SUBROUTINE BKTRIP(COLB,COLC,BIKTMP,L,X,Y)
00103      2*            DIMENSION COLB(13),COLC(13),BIKTMP(60,60)
00104      3*            INTEGER COLB,COLC,X,Y
00105      4*            X=COLB(L)
00106      5*            Y=COLC(L)
00107      6*            BIKTRP(X,Y)=BIKTRP(X,Y)+1
00110      7*            RETURN
00111      8*            END

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

```
@FOR,IS SUB4
FOR S11D-09/04/73-17:36:55 (,0)

   SUBROUTINE BSTRIP    ENTRY POINT 000033

   STORAGE USED: CODE(1) 000043; DATA(0) 000010; BLANK COMMON(2) 000000

   EXTERNAL REFERENCES (BLOCK, NAME)

    0003   NERR3$

   STORAGE ASSIGNMENT  (BLOCK, TYPE, RELATIVE LOCATION, NAME)

    0000   000001 INJP$


00101      1*            SUBROUTINE BSTRIP(COLB,COLC,BUSTRP,L,X,Y)
00103      2*            DIMENSION COLB(13),COLC(13),BUSTRP(60,60)
00104      3*            INTEGER COLB,COLC,X,Y
00105      4*            X=COLB(L)
00106      5*            Y=COLC(L)
00107      6*            BUSTRP(X,Y)=BUSTRP(X,Y)+1
00110      7*            RETURN
00111      8*            END

      END OF COMPILATION:        NO  DIAGNOSTICS.
```

APPENDIX IV

Definition of variables for both the Summaries Program (Appendix II) and the Trips Program (Appendix III).

```
NSWTC$/FOR68=2S          1    001000 001024
NRBLK$/FOR68             1    001025 001047
NRWND$/FOR68=2R          1    001050 001132        2    040000 040011
NWEF$/FOR68=2S           1    001133 001341        2    040012 040031
NBDCV$/FOR64             1    001342 001467        2    040032 040074
NFTV$/FOR                1    001470 001512
NCNVT$/FOR68             1    001513 001734        2    040075 040171
NCLOS$/FOR68=2S          1    001735 002202        2    040172 040225
NWBLK$/FOR68             1    002203 002314
NBSBL$/FOR68             1    002315 002355
NUPDA$/FOR68             1    002356 002411
NBFOO$/FOR                                         2    040226 042427
NERR$/FOR68=2Q           1    002412 002755        2    042430 042574
NOTIN$/FOR68             1    002756 003252        2    042575 042600
NOUT$/FOR68              1    003253 004266        2    042601 042633
NFMT$/FOR68=2D           1    004267 005144        2    042634 042710
NIOER$/FOR68=2K          1    005145 005351        2    042711 043047
NFCHK$/FOR68=2R          1    005352 006336        2    043050 043223
                                                   4    043224 043275
NTAB$/FOR                                          2    043276 043334
ERU$/SY868=2S
NIER$/FOR68=2D           1    006337 006506        2    043335 043453
NOBUF$/FOR68             1    006507 006547
TIR$/FOR68=2I            1    006550 007234        0    043454 043504
                                                   2    043505 043767
MAIN                     1    007235 007312        0    043770 045410

SY$$*RLIB$, LEVEL 68=2S
END RMAP: 0.550 SECONDS, 027 BLOCKS
```

DEFINITION OF VARIABLE NAMES

NRESP=TOTAL NUMBER OF RESPONDENTS
NANS1---NANS5=NUMBER OF RESPONDENTS ANSWERING QUESTIONS 1 = 5 ON THE QUESTIONNAIRE
NANSD=NUMBER OF RESPONDENTS INDICATING DAY OF WEEK REPORTED

PANS1---PANS5=PERCENT OF RESPONDENTS ANSWERING QUESTIONS 1---5
PANSD=PERCENT OF RESPONDENTS INDICATING DAY OF WEEK REPORTED

PSKL1---PSKL5=PERCENT OF TOTAL SCHOOL POPULATION ANSWERING QUESTIONS 1---5
PSKLD=PERCENT OF TOTAL SCHOOL POPULATION INDICATING DAY OF WEEK REPORTED

UGRD=NUMBER OF UNDERGRADUATES RESPONDING TO QUESTIONNAIRE
GRD=NUMBER OF GRADUATE STUDENTS RESPONDING TO QUESTIONNAIRE
FS=NUMBER OF FACULTY AND STAFF RESPONDING TO QUESTIONNAIRE
OTH=NUMBER OF OTHERS RESPONDING TO QUESTIONNAIRE

PUGRD,PGRD,PFS,POTH = PERCENT OF TOTAL RESPONDENTS MADE UP OF EACH RESPECTIVE AFFILIATION GROUP

PPUG=PERCENT OF THE TOTAL SCHOOL POPULATION OF UNDERGRADUATES WHO RESPONDED TO THE QUESTIONNAIRE
PPG=PERCENT OF THE TOTAL SCHOOL POPULATION OF GRADUATE STUDENTS WHO RESPONDED TO THE QUESTIONNAIRE
PPFS=PERCENT OF THE TOTAL SCHOOL POPULATION OF FACULTY AND STAFF WHO RESPONDED TO THE QUESTIONNAIRE

ND1---ND4=NUMBER OF RESPONDENTS LIVING IN EACH OF FOUR CATEGORIES OF DISTANCE FROM CAMPUS...

D1=ON CAMPUS
D2=0-5 MILES FROM TECH
D3=6-10 MILES FROM TECH
D4=MORE THAN 10 MILES FROM TECH

PD1---PD4=PERCENT OF RESPONDENTS LIVING IN EACH DISTANCE CATEGORY

NDAUT=NUMBER WHO DROVE AN AUTOMOBILE TO CAMPUS
PDAUT=PERCENT OF RESPONDENTS WHO LIVE OFF CAMPUS WHO DROVE AN AUTOMOBILE TO SCHOOL
ENDAUT=EXPANDED NUMBER WHO DROVE AN AUTOMOBILE TO CAMPUS (EXPANDED TO TOTAL SCHOOL POPULATION)
NPAUT,PPAUT,ENPAUT=NUMBER, PERCENT, AND EXPANDED NUMBER OF RESPONDENTS WHO CAME TO SCHOOL AS A PASSENGER IN AN AUTOMOBILE
NDMOT,PDMOT,ENDMOT=NUMBER, PERCENT, AND EXPANDED NUMBER OF RESPONDENTS WHO DROVE A MOTORCYCLE TO SCHOOL
NPBUS,PPBUS,ENPBUS=NUMBER, PERCENT, AND EXPANDED NUMBER OF RESPONDENTS WHO LIVE OFF CAMPUS WHO CAME TO SCHOOL BY BUS
NDBIK,PDBIK,ENDBIK=NUMBER, PERCENT, AND EXPANDED NUMBER OF RESPONDENTS WHO LIVE OFF CAMPUS WHO RODE A BICYCLE TO SCHOOL

NAUT,PAUT,ENAUT=NUMBER, PERCENT, AND EXPANDED NUMBER OF RESPONDENTS WHO HAVE AN AUTOMOBILE AVAILABLE FOR USE ON CAMPUS

NMOT,PMOT,ENMOT=NUMBER, PERCENT, AND EXPANDED NUMBER OF RESPONDENTS WHO HAVE A MOTORCYCLE AVAILABLE FOR USE ON CAMPUS
NBIK,PBIK,ENBIK=NUMBER, PERCENT, AND EXPANDED NUMBER OF RESPONDENTS WHO HAVE A BICYCLE AVAILABLE FOR USE ON CAMPUS
NBUS,PBUS,ENBUS=NUMBER, PERCENT, AND EXPANDED NUMBER OF RESPONDENTS WHO HAVE BUS AVAILABLE FOR USE ON CAMPUS

NWLK,PWLK,ENWLK=NUMBER, PERCENT, AND EXPANDED NUMBER OF RESPONDENTS WHO HAVE WALKING AVAILABLE FOR USE ON CAMPUS

NMON---NSAT=NUMBER OF RESPONDENTS REPORTING EACH DAY OF THE WEEK
PMON---PSAT=PERCENT OF RESPONDENTS REPORTING ON EACH DAY OF THE WEEK

THE FOLLOWING IS A LIST OF DEPARTMENT NAMES AND THE CORRESPONDING CODE NUMBER OF EACH USED IN THIS PROGRAM

1 ADMINISTRATION
2 AEROSPACE ENG
3 AIR FORCE ROTC
4 ALUMNI ASSOCIATION
5 ARCHITECTURE
6 ARMY ROTC - MILITARY SCIENCE
7 ATHLETICS, PT, ETC,
8 CERAMIC ENG
9 CHEMICAL ENG
10 CHEMISTRY
11 CIVIL ENG
12 COMPUTER CENTER

13 CONTINUING EDUCATION
14 DEAN OF STUDENTS
15 ELECTRICAL ENG
16 ESM
17 EES
18 ENVIRONMENTAL RESOURCES CENTER
19 GEOPHYSICAL SCIENCES
20 INDUSTRIAL EDUCATION

21 INDUSTRIAL AND SYSTEMS ENG
22 INFIRMARY, HEALTH SERVICES
23 LANGUAGE
24 LIBRARY
25 NAVY ROTC, NAVAL SCIENCE
26 NUCLEAR ENG
27 STUDENT CENTER, BOOKSTORE, POST OFFICE
28 TEXTILES
29 PHYSICAL PLANT
30 POLICE

31 MECHANICAL ENG,
32 INDUSTRIAL MANAGEMENT
33 MATHEMATICS
34 INFORMATION AND COMPUTER SCIENCE
35 PSYCHOLOGY
36 YMCA
37 PHYSICS
38 ENGLISH,SOCIAL SCIENCES
39 HOUSING
40 BIOLOGY
41 CITY PLANNING
42 FRATERNITY EMPLOYEE
43 VISITOR
44 INDUSTRIAL DESIGN
45 WGST
46 GRAPHICS

Definition of variables - Trips Program

NTTOT = total number of trips by respondents
NTS = number of trips by student respondents
NTFS = number of trips by faculty and staff respondents
UNKNAF = number of trips by respondents of unknown school affiliation

AVNT = average number of trips overall by respondents
AVNTS, AVNTFS = average number of trips by students and by faculty and staff respondents respectively
NTSK = expanded number of trips per day (expanded to total school population)
NTSSK, NTFSSK = expanded number of student and faculty - staff trips per day

TMON -- TSAT = number of trips by respondents on each day of the week
PTMON -- PTSAT = percent of total trips on each day
UNKND = number of trips for which the day of the week was not reported
PUNKND = percent of total trips for which the day was not reported

CLST, PCLST = number and percent of trips made for the purpose of class
STYT, PSTYT = number and percent of trips made for the purpose of study
MLT, PMLT = number and percent of trips made for the purpose of meal
RECT, PRECT = number and percent of trips made for the purpose of recreation
SBT, PSBT = number and percent of trips made for the purpose of school business
OTHT, POTHT=number and percent of trips made for some other purpose
UNKNP, PUNKNP = number and percent of trips for which the purpose was not reported

TWLK, PTWLK = number and percent of trips made by walking
TCAR, PTCAR = number and percent of trips made by car
TBUS, PTBUS = number and percent of trips made by bus
TBIK, PTBIK = number and percent of trips made by bicycle
UNKNM, PUNKNM = number and percent of trips for which the mode of travel was not reported
TMOT, PTMOT=number and percent of trips made by motorcycle

AMT, PAMT = number and percent of A.M. (morning) trips made during a specified time period (10 A.M. - 11 A.M.0
PMT, PPMT = number and percent of P.M. trips made during a specified time period
UNKNT, PUNKNT = number and percent of trips for which time was not reported

TRIP(X,Y) = number of trips by respondents from zone X to zone Y

PTRIP(X,Y) = percent of total trips (all zones) which went from zone X to zone Y

ETRIP(X,Y) = expanded number of trips from zone X to zone Y (expanded to total school population)

WALKTRIP(X,Y) = number of walk trips made by respondents from zone X to zone Y (not expanded)

BUSTRIP(X,Y) = number of bus trips made by respondents from zone X to zone Y (not expanded)

CARTRIP(X,Y) = number of car trips made by respondents from zone X to zone Y (not Expanded)

BIKETRIP(X,Y) = number of bicycle trips made by respondents from zone X to zone Y (not expanded); to expand these numbers, multiply by (NSKL/NRESP), where NSKL = total population of the school including students, faculty, and staff, and NRESP = number of respondents to the survey (NSKL=8882 , NRESP=1828)

APPENDIX V

Results of Summary Program and Trips Program:

Pages 64-66	Summary of characteristics of respondents (Summary Program)
Page 66	Summary of trip characteristics (Trips Program)
Pages 66-80	Trip Table; Trips - All Modes Combined
Pages 80-83	Trip Table; Walk Trips
Pages 84-87	Trip Table; Bus Trips
Pages 87-90	Trip Table; Car Trips
Pages 90-93	Trip Table; Bicycle Trips

```
NFTCH$/FOR68            1   001470 001751       2   040075 040110
NFTV$/FOR               1   001752 001774
NCNVT$/FOR68            1   001775 002216       2   040111 040205
NCLOS$/FOR68-2S         1   002217 002464       2   040206 040241
NWBLK$/FOR68            1   002465 002576
NBSBL$/FOR68            1   002577 002637
NUPDA$/FOR68            1   002640 002673
NBFOU$/FOR                                      2   040242 042443
NERR$/FOR68-2C          1   002674 003237       2   042444 042610
NOTIN$/FOR68            1   003240 003534       2   042611 042614
NOUT$/FOR68             1   003535 004550       2   042615 042647
NIOER$/FOR68-2K         1   004551 004755       2   042650 043006
NININ$/FOR68-2B         1   004756 005146       2   043007 043007
NINPT$/FOR68            1   005147 006033       2   043010 043033
NFMT$/FOR68-2D          1   006034 006711       2   043034 043110
NFCHK$/FOR68-2K         1   006712 007676       2   043111 043264
```

RESULTS OF SUMMARY PROGRAM


```
SYS$*RLIB$. LEVEL 68-25
END RMAP; 0.835 SECONDS, 027 BLOCKS
     NRESP= 2199.0 NANS1= 2195.0 NANS2= 2189.0 NANS3= 1345.0 NANS4= 1342.0 NANS5= 1825.0  ANSD= 1710.0
                   PANS1=  99.82 PANS2=  99.55 PANS3=  61.16 PANS4=  61.03 PANS5=  82.99 PANSD=  77.76
                   PSKL1=  24.71 PSKL2=  24.65 PSKL3=  15.14 PSKL4=  15.11 PSKL5=  20.55  SKLD=  19.25
```

NUMBER AND PERCENT OF RESPONDENTS BY DEPT

DEPT	NO.	PERCENT
1	66.0	3.00
2	83.0	3.77
3	7.0	.32
4	6.0	.27
5	76.0	3.46
6	4.0	.18
7	21.0	.95
8	15.0	.68
9	83.0	3.77
10	92.0	4.18
11	213.0	9.69
12	14.0	.64
13	8.0	.36
14	9.0	.41
15	244.0	11.10
16	26.0	1.18
17	145.0	6.59
18	4.0	.18
19	10.0	.45
20	5.0	.23
21	143.0	6.50

See Appendix IV For Definition Of Variables

22	15.0	.68
23	7.0	.32
24	31.0	1.41
25	7.0	.32
26	20.0	.91
27	18.0	.82
28	25.0	1.14
29	21.0	.95
30	3.0	.14
31	148.0	6.73
32	196.0	8.91
33	62.0	2.82
34	52.0	2.36
35	26.0	1.18
36	.0	.00
37	94.0	4.27
38	25.0	1.14
39	11.0	.50
40	40.0	1.82
41	18.0	.82
42	.0	.00
43	.0	.00
44	5.0	.23
45	.0	.00
46	1.0	.05

UGRD= 1184.0 GRD= 309.0 FS= 690.0 OTH= 12.0
PUGRD= 53.84 PGRD= 14.05 PFS= 31.38 POTH= .55
PPUG= 20.3 PPG= 23.7 PPFS= 38.9

ND1= 866.0 ND2= 373.0 ND3= 358.0 ND4= 592.0
PD1= 39.38 PD2= 16.96 PD3= 16.28 PD4= 26.92

NDAUT= 1162.0 NPAUT= 72.0 NDMOT= 19.0 NPBUS= 41.0 NDBIK= 18.0 NPEDS= 33.0
PDAUT= 87.83 PPAUT= 5.44 PDMOT= 1.44 PPBUS= 3.10 PDBIK= 1.36 PPEDS= 2.49 NOFFC= 1323.0
ENDAUT= 3941.0 ENPAUT= 244.2 ENDMOT= 64.4 ENPBUS= 139.1 ENDBIK= 61.0 ENPEDS= 111.9 NTOFFC= 4487.0

NUMBER AND PERCENT PARKED IN EACH ZONE

ZONE	NO.	PERCENT
1	14.0	1.04
2	3.0	.22
3	4.0	.30
4	15.0	1.12
5	23.0	1.71
6	167.0	12.44
7	18.0	1.34
8	1.0	.07
9	123.0	9.17
10	39.0	2.91
11	2.0	.15
12	36.0	2.68

13	12.0	.89
14	18.0	1.34
15	37.0	2.76
16	83.0	6.18
17	3.0	.22
18	11.0	.82
19	23.0	1.71
20	25.0	1.86
21	15.0	1.12
22	7.0	.52
23	6.0	.45
24	208.0	15.50
25	.0	.00
26	41.0	3.06
27	.0	.00
28	28.0	2.09
29	43.0	3.20
30	27.0	2.01
31	22.0	1.64
32	39.0	2.91
33	17.0	1.27
34	11.0	.82
35	10.0	.75
36	14.0	1.04
37	14.0	1.04
38	38.0	2.83
39	.0	.00
40	9.0	.67
41	16.0	1.19
42	21.0	1.56
43	.0	.00
44	1.0	.07
45	2.0	.15
46	.0	.00
47	3.0	.22
48	4.0	.30
49	3.0	.22
50	2.0	.15
51	16.0	1.19
52	15.0	1.12
53	33.0	2.46
54	9.0	.67
55	8.0	.60
56	3.0	.22

NAUT= 1721.0 NMOT= 56.0 NBIK= 254.0 NBUS= 2190.0 NWLK= 2199.0
PAUT= 78.26 PMOT= 2.55 PBIK= 11.55 PBUS= 100.00 PWLK= 100.00
ENAUT= 6951.3ENMOT= 226.2ENBIK= 1025.9ENBUS= 8872.0ENWLK= 8882.0

NMON= 529.0 NTUS= 134.0 NWED= 252.0 NTHR= 353.0 NFRI= 454.0 NSAT= 4.0
PMON= 24.06 PTUS= 6.29 PWED= 10.55 PTHR= 16.05 PFRI= 20.65 PSAT= .18

RESULTS OF TRIPS PROGRAM

See Appendix IV For Definition Of Variables

```
QXQT
        ERROR IN READING COL9
    NTTOT= 13344.0  NTS= 10970.0  NTFS=  2330.0  UNKNAF=    44.0
     AVNT=    7.30  AVNTS=    8.02  AVNTFS=    5.15
     NTSK= 64836.7  NTSSK= 57263.7  NTFSSK=  9144.7

   TMON= 3717.0 TTUS= 1004.0 TWED= 1877.0 TTHR= 2655.0 TFRI= 3196.0 TSAT=   32.0 UNKND=  863.0
  PTMON=  27.9 PTTUS=   7.5 PTWED=  14.1 PTTHR=  19.9 PTFRI=  24.0 PTSAT=    .2 PUNKND=   6.5

   CLST= 3781.0 STYT= 1327.0 MLT= 1755.0 RECT=  852.0 SBT= 1890.0 OTHT= 3564.0 UNKNP=  175.0
  PCLST=  28.3 PSTYT=   9.9 PMLT=  13.2 PRECT=   6.4 PSBT=  14.2 POTHT=  26.7 PUNKNP=   1.3

   TWLK= 8682.0 TCAR= 3486.0 TBUS=  483.0 TMOT=   96.0 TBIK=  342.0 UNKNM=  255.0
  PTWLK=  65.1 PTCAR=  26.1 PTBUS=   3.6 PTMOT=    .7 PTBIK=   2.6 PUNKNM=   1.9

   UNKNT=  396.0 PUNKNT=    3.0
```

DISTRIBUTION OF TRIPS BY HOUR

		AMT	PAMT	PMT	PPMT
0	100	22.0	.2	603.0	4.5
100	200	43.0	.3	1663.0	12.5
200	300	24.0	.2	1396.0	10.5
300	400	14.0	.1	1074.0	8.0
400	500	16.0	.1	1008.0	7.6
500	600	14.0	.1	993.0	7.4
600	700	194.0	1.5	731.0	5.5
700	800	1066.0	8.0	429.0	3.2
800	900	1419.0	10.6	281.0	2.1
900	1000	1635.0	12.3	195.0	1.5
1000	1100	1700.0	12.7	134.0	1.0
1100	1200	1697.0	12.7	509.0	3.8
1200	1300	303.0	2.3	414.0	3.1

TRIP(X,Y) MATRIX - ALL MODES - ALL DAYS

Origin Zone	Destination Zone → 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
0	66.0	3.1	.0	.0	13.0	34.0	81.0	33.0	.0	68.0	18.0	2.0	78.0	21.0	41.0	47.0	53.0	3.0	7.0	SAMPLE
	.5	.0	.0	.0	.1	.3	.6	.2	.0	.5	.1	.0	.6	.2	.3	.4	.4	.0	.1	% OF TOTAL
	320.7	15.1	.0	.0	63.2	165.2	393.6	160.3	.0	330.4	87.5	9.7	379.0	102.0	199.2	228.4	257.5	14.6	34.0	EXPANDED
1	63.0	22.0	.0	.0	8.0	.0	10.0	18.0	.0	5.0	4.0	1.0	73.0	9.0	16.0	26.0	.0	.0	2.0	
	.5	.2	.0	.0	.1	.0	.1	.1	.0	.0	.0	.0	.5	.1	.1	.2	.0	.0	.0	
	306.1	106.9	.0	.0	38.9	.0	48.6	87.5	.0	24.3	19.4	4.9	354.7	43.7	77.7	126.3	.0	.0	9.7	
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	

Origin Zone	Destination Zone → 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	14.6
3	.0	1.0	1.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	4.9	4.9	.0	.0	4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0
4	17.0	12.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	5.0	.0	.0	4.0	3.0	.0	3.0
	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	82.6	58.3	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0	24.3	.0	.0	19.4	14.6	.0	14.6
5	37.0	.0	.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	2.0	1.0	.0	.0	9.0	.0	.0
	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
	179.8	.0	.0	.0	4.9	.0	.0	.0	.0	4.9	.0	.0	9.7	4.9	.0	.0	43.7	.0	.0
6	46.0	7.0	.0	.0	1.0	.0	.0	6.0	.0	1.0	2.0	.0	14.0	4.0	21.0	12.0	2.0	2.0	.0
	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.2	.1	.0	.0	.0
	223.5	34.0	.0	.0	4.9	.0	.0	29.2	.0	4.9	9.7	.0	68.0	19.4	102.0	58.3	9.7	9.7	.0
7	35.0	9.0	.0	1.0	.0	1.0	6.0	1.0	.0	2.0	.0	.0	83.0	17.0	3.0	8.0	3.0	.0	.0
	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.6	.1	.0	.1	.0	.0	.0
	170.1	43.7	.0	4.9	.0	4.9	29.2	4.9	.0	9.7	.0	.0	403.3	82.6	14.6	38.9	14.6	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	58.0	4.0	.0	.0	2.0	1.0	3.0	3.0	.0	.0	.0	.0	16.0	1.0	1.0	4.0	.0	1.0	.0
	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
	281.8	19.4	.0	.0	9.7	4.9	14.6	14.6	.0	.0	.0	.0	77.7	4.9	4.9	19.4	.0	4.9	.0
10	16.0	2.0	.0	.0	1.0	.0	3.0	1.0	.0	.0	.0	.0	5.0	2.0	1.0	.0	.0	2.0	.0
	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	77.7	9.7	.0	.0	4.9	.0	14.6	4.9	.0	.0	.0	.0	24.3	9.7	4.9	.0	.0	9.7	.0
11	1.0	1.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	15.0	.0	.0	.0	3.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
	4.9	4.9	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0	72.9	.0	.0	.0	14.6	.0	.0
12	91.0	145.0	.0	1.0	4.0	1.0	12.0	55.0	.0	20.0	4.0	10.0	43.0	38.0	60.0	70.0	9.0	8.0	1.0
	.7	1.1	.0	.0	.0	.0	.1	.4	.0	.1	.0	.1	.3	.3	.4	.5	.1	.1	.0
	442.2	704.5	.0	4.9	19.4	4.9	58.3	267.2	.0	97.2	19.4	48.6	208.9	184.6	291.5	340.1	43.7	38.9	4.9
13	24.0	4.0	.0	.0	.0	2.0	2.0	9.0	.0	.0	1.0	1.0	56.0	2.0	5.0	3.0	4.0	3.0	.0
	.2	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0
	116.6	19.4	.0	.0	.0	9.7	9.7	43.7	.0	.0	4.9	4.9	272.1	9.7	24.3	14.6	19.4	14.6	.0
14	41.0	11.0	.0	.0	1.0	.0	19.0	3.0	.0	2.0	.0	.0	73.0	11.0	2.0	4.0	.0	7.0	.0
	.3	.1	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.5	.1	.0	.0	.0	.1	.0
	199.2	53.4	.0	.0	4.9	.0	92.3	14.6	.0	9.7	.0	.0	354.7	53.4	9.7	19.4	.0	34.0	.0
15	53.0	18.0	.0	.0	4.0	.0	12.0	7.0	.0	2.0	3.0	.0	110.0	9.0	9.0	17.0	6.0	4.0	.0
	.4	.1	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.8	.1	.1	.1	.0	.0	.0
	257.5	87.5	.0	.0	19.4	.0	58.3	34.0	.0	9.7	14.6	.0	534.5	43.7	43.7	82.6	29.2	19.4	.0
16	55.0	.0	1.0	.0	4.0	13.0	2.0	1.0	.0	.0	.0	3.0	12.0	2.0	.0	6.0	14.0	.0	1.0
	.4	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.1	.0	.0

ALL TRIPS

Origin Zone	Destination Zone → 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	267.2	.0	4.9	.0	19.4	63.2	9.7	4.9	.0	.0	.0	14.6	58.3	9.7	.0	29.2	68.0	.0	4.9
17	6.0	.0	.0	1.0	.0	1.0	3.0	2.0	.0	1.0	2.0	.0	4.0	1.0	8.0	2.0	.0	.0	1.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
	29.2	.0	.0	4.9	.0	4.9	14.6	9.7	.0	4.9	9.7	.0	19.4	4.9	38.9	9.7	.0	.0	4.9
18	8.0	1.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	2.0	.0
	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	38.9	4.9	9.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	9.7	.0	.0	.0	.0	9.7	.0
19	13.0	4.0	.0	.0	1.0	1.0	1.0	.0	.0	.0	.0	.0	11.0	.0	8.0	.0	2.0	3.0	.0
	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.0	.0	.0	.0
	63.2	19.4	.0	.0	4.9	4.9	4.9	.0	.0	.0	.0	.0	53.4	.0	38.9	.0	9.7	14.6	.0
20	26.0	8.0	.0	.0	2.0	.0	1.0	7.0	.0	.0	.0	1.0	27.0	8.0	2.0	6.0	7.0	1.0	.0
	.2	.1	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.2	.1	.0	.0	.1	.0	.0
	126.3	38.9	.0	.0	9.7	.0	4.9	34.0	.0	.0	.0	4.9	131.2	38.9	9.7	29.2	34.0	4.9	.0
21	4.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0	1.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	19.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	4.9	.0	.0	4.9	.0	.0	.0
22	5.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	2.0	.0	.0	2.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	24.3	.0	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0	9.7	.0	.0	9.7	.0	.0	.0
23	46.0	28.0	.0	1.0	3.0	.0	3.0	3.0	.0	7.0	1.0	2.0	102.0	2.0	2.0	4.0	7.0	4.0	1.0
	.3	.2	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.8	.0	.0	.0	.1	.0	.0
	223.5	136.0	.0	4.9	14.6	.0	14.6	14.6	.0	34.0	4.9	9.7	495.6	9.7	9.7	19.4	34.0	19.4	4.9
24	119.0	.0	.0	.0	1.0	1.0	1.0	1.0	.0	1.0	.0	.0	13.0	2.0	1.0	5.0	2.0	3.0	.0
	.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
	578.2	.0	.0	.0	4.9	4.9	4.9	4.9	.0	4.9	.0	.0	63.2	9.7	4.9	24.3	9.7	14.6	.0
25	2.0	1.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	11.0	.0	.0	4.0	1.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
	9.7	4.9	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0	53.4	.0	.0	19.4	4.9	.0	.0
26	9.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	43.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0
27	38.0	32.0	.0	.0	2.0	.0	9.0	23.0	.0	28.0	4.0	2.0	278.0	13.0	14.0	109.0	.0	6.0	.0
	.3	.2	.0	.0	.0	.0	.1	.2	.0	.2	.0	.0	2.1	.1	.1	.8	.0	.0	.0
	184.6	155.5	.0	.0	9.7	.0	43.7	111.8	.0	136.0	19.4	9.7	1350.8	63.2	68.0	529.6	.0	29.2	.0
28	30.0	6.0	.0	1.0	.0	.0	.0	1.0	.0	.0	5.0	1.0	51.0	2.0	2.0	6.0	1.0	4.0	.0
	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0
	145.8	29.2	.0	4.9	.0	.0	.0	4.9	.0	.0	24.3	4.9	247.8	9.7	9.7	29.2	4.9	19.4	.0
29	34.0	15.0	.0	.0	.0	.0	.0	3.0	.0	6.0	2.0	1.0	65.0	4.0	5.0	8.0	.0	2.0	.0
	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0	.1	.0	.0	.0
	165.2	72.9	.0	.0	.0	.0	.0	14.6	.0	29.2	9.7	4.9	315.8	19.4	24.3	38.9	.0	9.7	.0
30	10.0	7.0	.0	.0	2.0	.0	.0	.0	.0	.0	1.0	1.0	14.0	.0	.0	3.0	.0	.0	1.0
	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
	48.6	34.0	.0	.0	9.7	.0	.0	.0	.0	.0	4.9	4.9	68.0	.0	.0	14.6	.0	.0	4.9

ALL TRIPS

ALL TRIPS

Origin Zone	Destination Zone → 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
31	25.0	2.0	.0	1.0	.0	.0	.0	3.0	.0	3.0	.0	1.0	17.0	2.0	2.0	4.0	.0	.0	1.0
	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
	121.5	9.7	.0	4.9	.0	.0	.0	14.6	.0	14.6	.0	4.9	82.6	9.7	9.7	19.4	.0	.0	4.9
32	55.0	5.0	.0	.0	1.0	7.0	1.0	1.0	.0	1.0	.0	3.0	32.0	6.0	6.0	4.0	3.0	1.0	.0
	.4	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0
	267.2	24.3	.0	.0	4.9	34.0	4.9	4.9	.0	4.9	.0	14.6	155.5	29.2	29.2	19.4	14.6	4.9	.0
33	18.0	10.0	2.0	.0	1.0	.0	.0	3.0	.0	3.0	3.0	.0	55.0	.0	6.0	9.0	6.0	.0	.0
	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.0	.0	.1	.0	.0	.0
	87.5	48.6	9.7	.0	4.9	.0	.0	14.6	.0	14.6	14.6	.0	267.2	.0	29.2	43.7	29.2	.0	.0
34	23.0	7.0	.0	.0	.0	.0	.0	6.0	.0	9.0	3.0	.0	57.0	2.0	2.0	4.0	2.0	.0	1.0
	.2	.1	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.4	.0	.0	.0	.0	.0	.0
	111.8	34.0	.0	.0	.0	.0	.0	29.2	.0	43.7	14.6	.0	277.0	9.7	9.7	19.4	9.7	.0	4.9
35	11.0	2.0	.0	.0	.0	.0	3.0	1.0	.0	.0	.0	.0	6.0	1.0	7.0	2.0	.0	3.0	1.0
	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
	53.4	9.7	.0	.0	.0	.0	14.6	4.9	.0	.0	.0	.0	29.2	4.9	34.0	9.7	.0	14.6	4.9
36	28.0	27.0	.0	1.0	1.0	5.0	10.0	10.0	1.0	8.0	1.0	4.0	80.0	5.0	3.0	8.0	10.0	1.0	.0
	.2	.2	.0	.0	.0	.0	.1	.1	.0	.1	.0	.0	.6	.0	.0	.1	.1	.0	.0
	136.0	131.2	.0	4.9	4.9	24.3	48.6	48.6	4.9	38.9	4.9	19.4	388.7	24.3	14.6	38.9	48.6	4.9	.0
37	12.0	5.0	.0	.0	1.0	1.0	.0	2.0	.0	2.0	.0	1.0	27.0	.0	2.0	1.0	1.0	.0	.0
	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0
	58.3	24.3	.0	.0	4.9	4.9	.0	9.7	.0	9.7	.0	4.9	131.2	.0	9.7	4.9	4.9	.0	.0
38	58.0	6.0	.0	1.0	2.0	3.0	3.0	6.0	.0	2.0	1.0	2.0	30.0	2.0	5.0	2.0	9.0	1.0	.0
	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.1	.0	.0
	281.8	29.2	.0	4.9	9.7	14.6	14.6	29.2	.0	9.7	4.9	9.7	145.8	9.7	24.3	9.7	43.7	4.9	.0
39	10.0	3.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	17.0	.0	2.0	3.0	.0	.0	.0
	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
	48.6	14.6	.0	.0	.0	.0	.0	9.7	.0	.0	.0	.0	82.6	.0	9.7	14.6	.0	.0	.0
40	33.0	6.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	30.0	4.0	7.0	6.0	.0	.0	3.0
	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.1	.0	.0	.0	.0
	160.3	29.2	.0	.0	.0	.0	.0	9.7	.0	.0	.0	.0	145.8	19.4	34.0	29.2	.0	.0	14.6
41	13.0	2.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	6.0	1.0	2.0	2.0	.0	.0	.0
	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	63.2	9.7	.0	.0	.0	.0	.0	9.7	.0	.0	.0	.0	29.2	4.9	9.7	9.7	.0	.0	.0
42	7.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	1.0	1.0	.0	1.0	.0
	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	34.0	4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	9.7	.0	4.9	4.9	.0	4.9	.0
43	1.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4.9	9.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
44	8.0	10.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	38.9	48.6	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0

ALL TRIPS

Origin Zone	Destination Zone → 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
45	3.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0	.0	.0	.0	2.0	.0	.0	1.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	14.6	.0	.0	.0	.0	.0	4.9	4.9	.0	.0	.0	.0	.0	9.7	.0	.0	4.9	.0	.0
46	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0
47	8.0	4.0	.0	.0	1.0	.0	.0	2.0	.0	.0	.0	.0	3.0	2.0	.0	6.0	2.0	.0	.0
	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	38.9	19.4	.0	.0	4.9	.0	.0	9.7	.0	.0	.0	.0	14.6	9.7	.0	29.2	9.7	.0	.0
48	27.0	2.0	.0	.0	.0	.0	.0	4.0	.0	.0	.0	.0	12.0	6.0	4.0	4.0	1.0	.0	.0
	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
	131.2	9.7	.0	.0	.0	.0	.0	19.4	.0	.0	.0	.0	58.3	29.2	19.4	19.4	4.9	.0	.0
49	8.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	5.0	1.0	1.0	4.0	.0	.0	.0
	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	38.9	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0	.0	24.3	4.9	4.9	19.4	.0	.0	.0
50	7.0	3.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	2.0	.0	.0
	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	34.0	14.6	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0	4.9	.0	.0	.0	9.7	.0	.0
51	15.0	8.0	.0	.0	.0	.0	2.0	1.0	.0	.0	.0	.0	6.0	2.0	2.0	2.0	1.0	.0	.0
	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	72.9	38.9	.0	.0	.0	.0	9.7	4.9	.0	.0	.0	.0	29.2	9.7	9.7	9.7	4.9	.0	.0
52	70.0	16.0	.0	.0	3.0	1.0	.0	6.0	.0	.0	.0	.0	48.0	9.0	14.0	24.0	2.0	3.0	.0
	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.1	.1	.2	.0	.0	.0
	340.1	77.7	.0	.0	14.6	4.9	.0	29.2	.0	.0	.0	.0	233.2	43.7	68.0	116.6	9.7	14.6	.0
53	28.0	14.0	.0	.0	1.0	.0	1.0	1.0	.0	.0	1.0	.0	19.0	7.0	5.0	5.0	2.0	1.0	.0
	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.0	.0	.0
	136.0	68.0	.0	.0	4.9	.0	4.9	4.9	.0	.0	4.9	.0	92.3	34.0	24.3	24.3	9.7	4.9	.0
54	61.0	17.0	.0	.0	6.0	.0	1.0	6.0	.0	.0	.0	1.0	59.0	12.0	12.0	59.0	1.0	3.0	.0
	.5	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.4	.1	.1	.4	.0	.0	.0
	296.4	82.6	.0	.0	29.2	.0	4.9	29.2	.0	.0	.0	4.9	286.7	58.3	58.3	286.7	4.9	14.6	.0
55	21.0	6.0	.0	.0	1.0	.0	2.0	2.0	.0	.0	.0	.0	11.0	.0	.0	13.0	1.0	.0	1.0
	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.1	.0	.0	.0
	102.0	29.2	.0	.0	4.9	.0	9.7	9.7	.0	.0	.0	.0	53.4	.0	.0	63.2	4.9	.0	4.9
56	1.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4.9	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Dest. Zone →	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	
0	14.0	19.0	8.0	6.0	41.0	141.0	3.0	13.0	37.0	29.0	38.0	14.0	28.0	53.0	22.0	25.0	13.0	29.0	10.0	50.0	SAMPLE
	.1	.1	.1	.0	.3	1.1	.0	.1	.3	.2	.3	.1	.2	.4	.2	.2	.1	.2	.1	.4	% OF TOTAL
	68.0	92.3	38.9	29.2	199.2	685.1	14.6	63.2	179.8	140.9	184.6	68.0	136.0	257.5	106.9	121.5	63.2	140.9	48.6	242.9	EXPANDED
1	4.0	10.0	.0	.0	34.0	4.0	1.0	.0	57.0	12.0	19.0	6.0	4.0	9.0	6.0	12.0	4.0	38.0	7.0	7.0	
	.0	.1	.0	.0	.3	.0	.0	.0	.4	.1	.1	.0	.0	.1	.0	.1	.0	.3	.1	.1	
	19.4	48.6	.0	.0	165.2	19.4	4.9	.0	277.0	58.3	92.3	29.2	19.4	43.7	29.2	58.3	19.4	184.6	34.0	34.0	

Origin Zone	Destination Zone → 19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0	.0	4.9	4.9	.0	.0	.0	.0	.0	.0
4	1.0	2.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	2.0	.0	7.0	.0	.0	.0	.0	1.0	1.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0
	4.9	9.7	.0	.0	4.9	.0	.0	.0	.0	.0	.0	9.7	.0	34.0	.0	.0	.0	.0	4.9	4.9
5	1.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	6.0	.0	.0	.0	5.0	1.0	2.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4.9	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0	29.2	.0	.0	.0	24.3	4.9	9.7
6	1.0	2.0	.0	.0	2.0	2.0	.0	.0	13.0	1.0	2.0	.0	1.0	.0	2.0	1.0	3.0	5.0	4.0	1.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4.9	9.7	.0	.0	9.7	9.7	.0	.0	63.2	4.9	9.7	.0	4.9	.0	9.7	4.9	14.6	24.3	19.4	4.9
7	.0	4.0	.0	1.0	3.0	.0	.0	.0	17.0	1.0	2.0	.0	2.0	2.0	7.0	6.0	.0	12.0	.0	7.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.1	.0	.0	.1	.0	.1
	.0	19.4	.0	4.9	14.6	.0	.0	.0	82.6	4.9	9.7	.0	9.7	9.7	34.0	29.2	.0	58.3	.0	34.0
8	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	3.0	1.0	.0	3.0	1.0	.0	.0	28.0	4.0	7.0	.0	3.0	1.0	2.0	5.0	1.0	5.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	14.6	4.9	.0	14.6	4.9	.0	.0	136.0	19.4	34.0	.0	14.6	4.9	9.7	24.3	4.9	24.3	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	3.0	5.0	1.0	.0	.0	2.0	1.0	1.0	.0	1.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	14.6	24.3	4.9	.0	.0	9.7	4.9	4.9	.0	4.9	.0	.0
11	.0	1.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	1.0	1.0	.0	.0	.0	3.0	2.0	2.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	4.9	.0	.0	.0	.0	.0	.0	4.9	.0	4.9	.0	4.9	4.9	.0	.0	.0	14.6	9.7	9.7
12	9.0	21.0	2.0	2.0	68.0	22.0	6.0	.0	189.0	39.0	49.0	17.0	12.0	34.0	22.0	42.0	6.0	92.0	18.0	41.0
	.1	.2	.0	.0	.5	.2	.0	.0	1.4	.3	.4	.1	.1	.3	.2	.3	.0	.7	.1	.3
	43.7	102.0	9.7	9.7	330.4	106.9	29.2	.0	918.3	189.5	238.1	82.6	58.3	165.2	106.9	204.1	29.2	447.0	87.5	199.2
13	1.0	5.0	1.0	.0	2.0	2.0	1.0	.0	11.0	1.0	2.0	1.0	1.0	6.0	3.0	3.0	1.0	9.0	.0	5.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
	4.9	24.3	4.9	.0	9.7	9.7	4.9	.0	53.4	4.9	9.7	4.9	4.9	29.2	14.6	14.6	4.9	43.7	.0	24.3
14	9.0	3.0	1.0	.0	.0	.0	.0	.0	14.0	1.0	5.0	1.0	2.0	10.0	7.0	3.0	4.0	7.0	6.0	3.0
	.1	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.1	.0	.0	.1	.0	.0
	43.7	14.6	4.9	.0	.0	.0	.0	.0	68.0	4.9	24.3	4.9	9.7	48.6	34.0	14.6	19.4	34.0	29.2	14.6
15	1.0	4.0	2.0	3.0	18.0	1.0	5.0	.0	87.0	3.0	5.0	5.0	3.0	4.0	9.0	4.0	1.0	20.0	3.0	6.0
	.0	.0	.0	.0	.1	.0	.0	.0	.7	.0	.0	.0	.0	.0	.1	.0	.0	.1	.0	.0
	4.9	19.4	9.7	14.6	87.5	4.9	24.3	.0	422.7	14.6	24.3	24.3	14.6	19.4	43.7	19.4	4.9	97.2	14.6	29.2
16	2.0	8.0	1.0	.0	9.0	.0	2.0	.0	3.0	.0	1.0	1.0	.0	8.0	4.0	1.0	.0	17.0	.0	10.0

ALL TRIPS

Origin Zone	Destination Zone → 19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
	.0	.1	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.1	.0	.1
	9.7	38.9	4.9	.0	43.7	.0	9.7	.0	14.6	.0	4.9	4.9	.0	38.9	19.4	4.9	.0	82.6	.0	48.6
17	2.0	1.0	.0	.0	5.0	7.0	.0	.0	7.0	3.0	2.0	.0	1.0	.0	.0	2.0	3.0	1.0	.0	1.0
	.0	.0	.0	.0	.0	.1	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	9.7	4.9	.0	.0	24.3	34.0	.0	.0	34.0	14.6	9.7	.0	4.9	.0	.0	9.7	14.6	4.9	.0	4.9
18	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	1.0	1.0	.0	1.0	1.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0	4.9	4.9	4.9	.0	4.9	4.9	.0	.0	.0
19	1.0	2.0	.0	.0	1.0	.0	1.0	.0	3.0	1.0	1.0	1.0	.0	2.0	.0	2.0	2.0	2.0	1.0	1.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4.9	9.7	.0	.0	4.9	.0	4.9	.0	14.6	4.9	4.9	4.9	.0	9.7	.0	9.7	9.7	9.7	4.9	4.9
20	3.0	5.0	.0	.0	4.0	1.0	.0	.0	2.0	3.0	.0	1.0	2.0	2.0	2.0	2.0	1.0	6.0	1.0	5.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	14.6	24.3	.0	.0	19.4	4.9	.0	.0	9.7	14.6	.0	4.9	9.7	9.7	9.7	9.7	4.9	29.2	4.9	24.3
21	.0	1.0	.0	.0	3.0	.0	.0	.0	2.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	1.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	4.9	.0	.0	14.6	.0	.0	.0	9.7	.0	4.9	.0	.0	.0	.0	4.9	.0	.0	.0	4.9
22	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	4.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	4.9	.0	.0	.0	.0	.0	19.4	.0	.0	.0	.0	.0	.0	4.9	.0	4.9
23	1.0	4.0	1.0	.0	5.0	17.0	.0	.0	19.0	3.0	7.0	3.0	2.0	5.0	6.0	7.0	1.0	16.0	3.0	26.0
	.0	.0	.0	.0	.0	.1	.0	.0	.1	.0	.1	.0	.0	.0	.0	.1	.0	.1	.0	.2
	4.9	19.4	4.9	.0	24.3	82.6	.0	.0	92.3	14.6	34.0	14.6	9.7	24.3	29.2	34.0	4.9	77.7	14.6	126.3
24	1.0	.0	.0	.0	12.0	1.0	11.0	.0	27.0	4.0	5.0	.0	1.0	7.0	10.0	11.0	.0	21.0	5.0	11.0
	.0	.0	.0	.0	.1	.0	.1	.0	.2	.0	.0	.0	.0	.1	.1	.1	.0	.2	.0	.1
	4.9	.0	.0	.0	58.3	4.9	53.4	.0	131.2	19.4	24.3	.0	4.9	34.0	48.6	53.4	.0	102.0	24.3	53.4
25	.0	.0	.0	.0	.0	10.0	.0	.0	4.0	1.0	.0	.0	1.0	2.0	.0	1.0	.0	2.0	.0	.0
	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	48.6	.0	.0	19.4	4.9	.0	.0	4.9	9.7	.0	4.9	.0	9.7	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	8.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	38.9	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0
27	4.0	4.0	1.0	.0	34.0	30.0	4.0	8.0	28.0	15.0	21.0	13.0	24.0	26.0	46.0	22.0	4.0	65.0	4.0	16.0
	.0	.0	.0	.0	.3	.2	.0	.1	.2	.1	.2	.1	.2	.2	.3	.2	.0	.5	.0	.1
	19.4	19.4	4.9	.0	165.2	145.8	19.4	38.9	136.0	72.9	102.0	63.2	116.6	126.3	223.5	106.9	19.4	315.8	19.4	77.7
28	.0	4.0	.0	.0	4.0	3.0	2.0	.0	15.0	12.0	19.0	5.0	5.0	4.0	6.0	4.0	.0	7.0	.0	4.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0
	.0	19.4	.0	.0	19.4	14.6	9.7	.0	72.9	58.3	92.3	24.3	24.3	19.4	29.2	19.4	.0	34.0	.0	19.4
29	2.0	1.0	.0	1.0	11.0	6.0	1.0	.0	28.0	20.0	13.0	13.0	4.0	10.0	7.0	9.0	.0	15.0	1.0	2.0
	.0	.0	.0	.0	.1	.0	.0	.0	.2	.1	.1	.1	.0	.1	.1	.1	.0	.1	.0	.0
	9.7	4.9	.0	4.9	53.4	29.2	4.9	.0	136.0	97.2	63.2	63.2	19.4	48.6	34.0	43.7	.0	72.9	4.9	9.7
30	1.0	4.0	.0	1.0	1.0	3.0	.0	.0	12.0	5.0	17.0	.0	8.0	2.0	3.0	4.0	1.0	2.0	1.0	3.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0

Origin Zone	Destination Zone → 19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
	4.9	19.4	.0	4.9	4.9	14.6	.0	.0	58.3	24.3	82.6	.0	38.9	9.7	14.6	19.4	4.9	9.7	4.9	14.6
31	.0	.0	.0	.0	3.0	1.0	.0	.0	15.0	5.0	4.0	10.0	3.0	9.0	4.0	5.0	.0	11.0	1.0	1.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.1	.0	.1	.0	.0	.0	.1	.0	.0
	.0	.0	.0	.0	14.6	4.9	.0	.0	72.9	24.3	19.4	48.6	14.6	43.7	19.4	24.3	.0	53.4	4.9	4.9
32	3.0	3.0	.0	.0	6.0	3.0	1.0	.0	25.0	5.0	7.0	3.0	6.0	32.0	8.0	22.0	2.0	18.0	4.0	12.0
	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.1	.0	.0	.2	.1	.2	.0	.1	.0	.1
	14.6	14.6	.0	.0	29.2	14.6	4.9	.0	121.5	24.3	34.0	14.6	29.2	155.5	38.9	106.9	9.7	87.5	19.4	58.3
33	.0	.0	1.0	.0	5.0	6.0	.0	.0	36.0	5.0	4.0	2.0	.0	15.0	.0	13.0	1.0	18.0	2.0	8.0
	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.1	.0	.1	.0	.1	.0	.1
	.0	.0	4.9	.0	24.3	29.2	.0	.0	174.9	24.3	19.4	9.7	.0	72.9	.0	63.2	4.9	87.5	9.7	38.9
34	1.0	1.0	1.0	.0	4.0	10.0	.0	.0	25.0	6.0	8.0	4.0	1.0	21.0	9.0	5.0	.0	20.0	2.0	14.0
	.0	.0	.0	.0	.0	.1	.0	.0	.2	.0	.1	.0	.0	.2	.1	.0	.0	.1	.0	.1
	4.9	4.9	4.9	.0	19.4	48.6	.0	.0	121.5	29.2	38.9	19.4	4.9	102.0	43.7	24.3	.0	97.2	9.7	68.0
35	1.0	.0	.0	.0	2.0	.0	.0	.0	1.0	1.0	2.0	1.0	.0	3.0	1.0	3.0	4.0	3.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4.9	.0	.0	.0	9.7	.0	.0	.0	4.9	4.9	9.7	4.9	.0	14.6	4.9	14.6	19.4	14.6	.0	.0
36	3.0	4.0	1.0	.0	20.0	15.0	2.0	2.0	73.0	6.0	21.0	3.0	6.0	11.0	21.0	20.0	3.0	8.0	13.0	20.0
	.0	.0	.0	.0	.1	.1	.0	.0	.5	.0	.2	.0	.0	.1	.2	.1	.0	.1	.1	.1
	14.6	19.4	4.9	.0	97.2	72.9	9.7	9.7	354.7	29.2	102.0	14.6	29.2	53.4	102.0	97.2	14.6	38.9	63.2	97.2
37	1.0	1.0	.0	.0	1.0	7.0	.0	.0	4.0	.0	1.0	2.0	1.0	1.0	1.0	1.0	.0	14.0	3.0	1.0
	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
	4.9	4.9	.0	.0	4.9	34.0	.0	.0	19.4	.0	4.9	9.7	4.9	4.9	4.9	4.9	.0	68.0	14.6	4.9
38	.0	4.0	1.0	.0	22.0	6.0	.0	.0	12.0	4.0	4.0	3.0	1.0	10.0	10.0	14.0	1.0	25.0	1.0	13.0
	.0	.0	.0	.0	.2	.0	.0	.0	.1	.0	.0	.0	.0	.1	.1	.1	.0	.2	.0	.1
	.0	19.4	4.9	.0	106.9	29.2	.0	.0	58.3	19.4	19.4	14.6	4.9	48.6	48.6	68.0	4.9	121.5	4.9	63.2
39	.0	.0	.0	.0	4.0	2.0	.0	.0	17.0	2.0	2.0	.0	.0	.0	1.0	.0	.0	2.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	19.4	9.7	.0	.0	82.6	9.7	9.7	.0	.0	.0	4.9	.0	.0	9.7	.0	.0
40	.0	.0	.0	1.0	10.0	3.0	.0	.0	17.0	1.0	4.0	5.0	1.0	4.0	1.0	.0	.0	8.0	6.0	3.0
	.0	.0	.0	.0	.1	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
	.0	.0	.0	4.9	48.6	14.6	.0	.0	82.6	4.9	19.4	24.3	4.9	19.4	4.9	.0	.0	38.9	29.2	14.6
41	1.0	.0	.0	.0	.0	.0	.0	.0	5.0	1.0	.0	.0	.0	.0	.0	1.0	2.0	1.0	2.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4.9	.0	.0	.0	.0	.0	.0	.0	24.3	4.9	.0	.0	.0	.0	.0	4.9	9.7	4.9	9.7	.0
42	.0	.0	.0	.0	.0	.0	.0	.0	2.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	9.7	4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9
43	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
44	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	1.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	9.7	4.9	.0	.0

ALL TRIPS

Origin Zone	Destination Zone → 19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
45	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0
46	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
47	1.0	.0	.0	.0	1.0	.0	1.0	.0	12.0	2.0	6.0	.0	1.0	.0	2.0	7.0	.0	11.0	1.0	3.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.1	.0	.1	.0	.0
	4.9	.0	.0	.0	4.9	.0	4.9	.0	58.3	9.7	29.2	.0	4.9	.0	9.7	34.0	.0	53.4	4.9	14.6
48	.0	.0	.0	.0	13.0	.0	.0	.0	20.0	2.0	9.0	1.0	.0	.0	6.0	6.0	.0	6.0	.0	3.0
	.0	.0	.0	.0	.1	.0	.0	.0	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	63.2	.0	.0	.0	97.2	9.7	43.7	4.9	.0	.0	29.2	29.2	.0	29.2	.0	14.6
49	.0	.0	.0	.0	4.0	1.0	.0	.0	8.0	.0	4.0	.0	.0	.0	1.0	1.0	.0	2.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	19.4	4.9	.0	.0	38.9	.0	19.4	.0	.0	.0	4.9	4.9	.0	9.7	.0	.0
50	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	4.9	.0	.0
51	.0	1.0	.0	1.0	.0	3.0	3.0	1.0	11.0	.0	4.0	.0	1.0	.0	.0	2.0	.0	3.0	1.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	4.9	.0	4.9	.0	14.6	14.6	4.9	53.4	.0	19.4	.0	4.9	.0	.0	9.7	.0	14.6	4.9	.0
52	1.0	3.0	1.0	.0	25.0	1.0	3.0	.0	53.0	11.0	18.0	8.0	5.0	5.0	8.0	15.0	3.0	22.0	1.0	8.0
	.0	.0	.0	.0	.2	.0	.0	.0	.4	.1	.1	.1	.0	.0	.1	.1	.0	.2	.0	.1
	4.9	14.6	4.9	.0	121.5	4.9	14.6	.0	257.5	53.4	87.5	38.9	24.3	24.3	38.9	72.9	14.6	106.9	4.9	38.9
53	1.0	3.0	.0	.0	5.0	2.0	1.0	.0	9.0	1.0	1.0	.0	1.0	7.0	1.0	8.0	2.0	5.0	7.0	2.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.1	.0	.0	.1	.0
	4.9	14.6	.0	.0	24.3	9.7	4.9	.0	43.7	4.9	4.9	.0	4.9	34.0	4.9	38.9	9.7	24.3	34.0	9.7
54	2.0	8.0	1.0	.0	16.0	2.0	.0	.0	113.0	2.0	10.0	9.0	11.0	5.0	18.0	14.0	2.0	18.0	6.0	9.0
	.0	.1	.0	.0	.1	.0	.0	.0	.8	.0	.1	.1	.1	.0	.1	.1	.0	.1	.0	.1
	9.7	38.9	4.9	.0	77.7	9.7	.0	.0	549.1	9.7	48.6	43.7	53.4	24.3	87.5	68.0	9.7	87.5	29.2	43.7
55	.0	.0	2.0	.0	3.0	1.0	.0	.0	23.0	1.0	3.0	4.0	2.0	3.0	6.0	6.0	.0	6.0	.0	3.0
	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	9.7	.0	14.6	4.9	.0	.0	111.8	4.9	14.6	19.4	9.7	14.6	29.2	29.2	.0	29.2	.0	14.6
56	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0

Dest. Zone →	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
0	7.0	25.0	13.0	11.0	1.0	3.0	1.0	.0	4.0	18.0	7.0	3.0	15.0	60.0	18.0	42.0	15.0	1.0
	.1	.2	.1	.1	.0	.0	.0	.0	.0	.1	.1	.0	.1	.4	.1	.3	.1	.0
	34.0	121.5	63.2	53.4	4.9	14.6	4.9	.0	19.4	87.5	34.0	14.6	72.9	291.5	87.5	204.1	72.9	4.9
1	3.0	13.0	1.0	1.0	2.0	7.0	.0	.0	5.0	2.0	1.0	3.0	10.0	14.0	14.0	21.0	6.0	.0
	.0	.1	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.1	.1	.1	.2	.0	.0

Origin Zone	Destination Zone → 39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
	14.6	63.2	4.9	4.9	9.7	34.0	.0	.0	24.3	9.7	4.9	14.6	48.6	68.0	68.0	102.0	29.2	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	1.0	.0	.0	.0	1.0	.0	.0	2.0	.0	1.0	.0	.0	2.0	1.0	4.0	2.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	4.9	.0	.0	.0	4.9	.0	.0	9.7	.0	4.9	.0	.0	9.7	4.9	19.4	9.7	.0
5	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	.0	.0	2.0	.0	2.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	4.9	.0	4.9	.0	.0	.0	9.7	.0	9.7	.0	.0	.0	.0
6	1.0	2.0	1.0	1.0	.0	.0	1.0	.0	.0	.0	1.0	.0	2.0	2.0	3.0	.0	1.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4.9	9.7	4.9	4.9	.0	.0	4.9	.0	.0	.0	4.9	.0	9.7	9.7	14.6	.0	4.9	.0
7	3.0	.0	1.0	.0	.0	.0	1.0	.0	2.0	2.0	.0	.0	5.0	2.0	4.0	2.0	2.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	14.6	.0	4.9	.0	.0	.0	4.9	.0	9.7	9.7	.0	.0	24.3	9.7	19.4	9.7	9.7	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	2.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	9.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	9.7	9.7	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	1.0	1.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0	4.9	4.9	4.9
12	13.0	25.0	8.0	1.0	.0	.0	.0	.0	14.0	16.0	8.0	.0	15.0	99.0	15.0	118.0	23.0	1.0
	.1	.2	.1	.0	.0	.0	.0	.0	.1	.1	.1	.0	.1	.7	.1	.9	.2	.0
	63.2	121.5	38.9	4.9	.0	.0	.0	.0	68.0	77.7	38.9	.0	72.9	481.0	72.9	573.3	111.8	4.9

ALL TRIPS

ALL TRIPS

Origin Zone	Destination Zone → 39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
13	1.0	4.0	2.0	.0	.0	.0	1.0	.0	3.0	4.0	1.0	.0	2.0	7.0	7.0	7.0	1.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1	.0	.0
	4.9	19.4	9.7	.0	.0	.0	4.9	.0	14.6	19.4	4.9	.0	9.7	34.0	34.0	34.0	4.9	.0
14	4.0	4.0	2.0	1.0	.0	1.0	.0	1.0	2.0	4.0	1.0	.0	3.0	10.0	4.0	7.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.0	.0
	19.4	19.4	9.7	4.9	.0	4.9	.0	4.9	9.7	19.4	4.9	.0	14.6	48.6	19.4	34.0	.0	.0
15	6.0	6.0	.0	.0	.0	.0	.0	.0	5.0	7.0	.0	.0	6.0	7.0	5.0	35.0	6.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.1	.0	.3	.0	.0
	29.2	29.2	.0	.0	.0	.0	.0	.0	24.3	34.0	.0	.0	29.2	34.0	24.3	170.1	29.2	.0
16	.0	.0	.0	.0	.0	2.0	1.0	.0	1.0	1.0	.0	2.0	1.0	2.0	2.0	1.0	2.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	9.7	4.9	.0	4.9	4.9	.0	9.7	4.9	9.7	9.7	4.9	9.7	.0
17	.0	1.0	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	4.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	4.9	4.9	4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	19.4	.0	.0
18	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	9.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0
19	.0	.0	1.0	.0	.0	.0	.0	.0	1.0	.0	.0	2.0	.0	2.0	1.0	1.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	4.9	.0	.0	.0	.0	.0	4.9	.0	.0	9.7	.0	9.7	4.9	4.9	.0	.0
20	.0	1.0	1.0	.0	.0	.0	.0	.0	2.0	1.0	.0	.0	.0	1.0	2.0	6.0	2.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	4.9	4.9	.0	.0	.0	.0	.0	9.7	4.9	.0	.0	.0	4.9	9.7	29.2	9.7	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	.0	1.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0	4.9	.0	4.9	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	4.9	.0	.0
23	4.0	3.0	.0	.0	.0	.0	.0	.0	2.0	11.0	7.0	.0	1.0	22.0	7.0	15.0	4.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.2	.1	.1	.0	.0
	19.4	14.6	.0	.0	.0	.0	.0	.0	9.7	53.4	34.0	.0	4.9	106.9	34.0	72.9	19.4	.0
24	1.0	6.0	1.0	.0	.0	1.0	.0	1.0	.0	.0	.0	.0	.0	2.0	5.0	3.0	.0	.0

Origin Zone	Destination Zone → 39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4.9	29.2	4.9	.0	.0	4.9	.0	4.9	.0	.0	.0	.0	.0	9.7	24.3	14.6	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	3.0	1.0	2.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0	.0	14.6	4.9	9.7	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	9.0	11.0	4.0	2.0	.0	1.0	.0	.0	10.0	10.0	4.0	1.0	12.0	34.0	18.0	70.0	14.0	.0
	.1	.1	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0	.1	.3	.1	.5	.1	.0
	43.7	53.4	19.4	9.7	.0	4.9	.0	.0	48.6	48.6	19.4	4.9	58.3	165.2	87.5	340.1	68.0	.0
28	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	1.0	.0	4.0	2.0	2.0	2.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4.9	4.9	.0	.0	.0	.0	.0	.0	.0	9.7	.0	4.9	.0	19.4	9.7	9.7	9.7	.0
29	2.0	5.0	1.0	.0	.0	.0	1.0	.0	3.0	12.0	4.0	.0	3.0	10.0	3.0	7.0	3.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.1	.0	.1	.0	.0
	9.7	24.3	4.9	.0	.0	.0	4.9	.0	14.6	58.3	19.4	.0	14.6	48.6	14.6	34.0	14.6	.0
30	.0	3.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	7.0	4.0	10.0	2.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.0	.0
	.0	14.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	34.0	19.4	48.6	9.7	.0
31	1.0	3.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	.0	3.0	1.0	4.0	1.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4.9	14.6	.0	.0	.0	.0	.0	.0	4.9	.0	4.9	.0	.0	14.6	4.9	19.4	4.9	.0
32	.0	4.0	.0	.0	.0	.0	1.0	.0	.0	2.0	1.0	.0	.0	3.0	6.0	3.0	3.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	19.4	.0	.0	.0	.0	4.9	.0	.0	9.7	4.9	.0	.0	14.6	29.2	14.6	14.6	.0
33	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	6.0	3.0	.0	1.0	7.0	2.0	15.0	2.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.0	.0
	4.9	4.9	.0	.0	.0	.0	.0	.0	.0	29.2	14.6	.0	4.9	34.0	9.7	72.9	9.7	.0
34	1.0	1.0	1.0	1.0	.0	.0	.0	.0	6.0	9.0	.0	1.0	1.0	14.0	11.0	11.0	6.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.1	.1	.1	.0	.0
	4.9	4.9	4.9	4.9	.0	.0	.0	.0	29.2	43.7	.0	4.9	4.9	68.0	53.4	53.4	29.2	.0
35	.0	1.0	1.0	.0	.0	1.0	.0	.0	.0	.0	1.0	.0	1.0	1.0	.0	2.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	4.9	4.9	.0	.0	4.9	.0	.0	.0	.0	4.9	.0	4.9	4.9	.0	9.7	.0	.0

ALL TRIPS

ALL TRIPS

Origin Zone	Destination Zone → 39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
36	5.0	4.0	4.0	.0	.0	.0	.0	.0	11.0	6.0	2.0	.0	2.0	26.0	5.0	18.0	2.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.2	.0	.1	.0	.0
	24.3	19.4	19.4	.0	.0	.0	.0	.0	53.4	29.2	9.7	.0	9.7	126.3	24.3	87.5	9.7	.0
37	.0	9.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	2.0	3.0	6.0	.0	.0
	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	43.7	4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	9.7	9.7	14.6	29.2	.0	.0
38	.0	4.0	1.0	.0	.0	.0	.0	.0	1.0	3.0	.0	.0	1.0	8.0	2.0	10.0	2.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.0	.0
	.0	19.4	4.9	.0	.0	.0	.0	.0	4.9	14.6	.0	.0	4.9	38.9	9.7	48.6	9.7	.0
39	.0	1.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	9.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
	.0	4.9	.0	.0	.0	4.9	.0	.0	.0	.0	.0	9.7	.0	.0	.0	43.7	.0	.0
40	1.0	6.0	1.0	1.0	.0	1.0	2.0	.0	.0	2.0	.0	.0	.0	4.0	.0	21.0	3.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0	.0
	4.9	29.2	4.9	4.9	.0	4.9	9.7	.0	.0	9.7	.0	.0	.0	19.4	.0	102.0	14.6	.0
41	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	4.0	.0	4.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0	4.9	19.4	.0	19.4	.0	.0
42	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	2.0	.0	1.0	1.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	4.9	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0	4.9	9.7	.0	4.9	4.9
43	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	4.9	.0	.0
44	2.0	.0	.0	.0	.0	.0	1.0	1.0	7.0	3.0	1.0	.0	.0	7.0	2.0	8.0	1.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0	.1	.0	.1	.0	.0
	9.7	.0	.0	.0	.0	.0	4.9	4.9	34.0	14.6	4.9	.0	.0	34.0	9.7	38.9	4.9	.0
45	.0	2.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	9.7	.0	.0	.0	.0	9.7	.0	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0
46	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	4.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Origin Zone	Destination Zone → 39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
47	.0	1.0	.0	.0	.0	6.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	10.0	4.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
	.0	4.9	.0	.0	.0	29.2	.0	.0	.0	.0	.0	.0	.0	4.9	4.9	48.6	19.4	.0
48	.0	2.0	1.0	.0	1.0	2.0	.0	.0	2.0	5.0	.0	4.0	1.0	1.0	9.0	7.0	1.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.1	.0	.0
	.0	9.7	4.9	.0	4.9	9.7	.0	.0	9.7	24.3	.0	19.4	4.9	4.9	43.7	34.0	4.9	.0
49	.0	1.0	.0	1.0	.0	3.0	.0	.0	.0	.0	1.0	1.0	.0	2.0	.0	2.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	4.9	.0	4.9	.0	14.6	.0	.0	.0	.0	4.9	4.9	.0	9.7	.0	9.7	.0	.0
50	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	4.0	1.0	.0	.0	5.0	3.0	6.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	4.9	.0	.0	.0	.0	4.9	.0	.0	.0	19.4	4.9	.0	.0	24.3	14.6	29.2	.0	.0
51	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	2.0	12.0	2.0	10.0	2.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.1	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	4.9	9.7	58.3	9.7	48.6	9.7	.0
52	.0	10.9	3.0	.0	.0	8.0	1.0	.0	.0	4.0	1.0	6.0	5.0	17.0	12.0	49.0	3.0	3.0
	.0	.1	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.1	.1	.4	.0	.0
	.0	48.6	14.6	.0	.0	38.9	4.9	.0	.0	19.4	4.9	29.2	24.3	82.6	58.3	238.1	14.6	14.6
53	.0	1.0	.0	3.0	1.0	5.0	.0	.0	1.0	10.0	.0	3.0	3.0	15.0	12.0	35.0	9.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.1	.1	.3	.1	.0
	.0	4.9	.0	14.6	4.9	24.3	.0	.0	4.9	48.6	.0	14.6	14.6	72.9	58.3	170.1	43.7	.0
54	12.0	22.0	1.0	1.0	1.0	12.0	.0	.0	5.0	4.0	2.0	6.0	11.0	39.0	32.0	109.0	26.0	.0
	.1	.2	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.1	.3	.2	.8	.2	.0
	58.3	106.9	4.9	4.9	4.9	58.3	.0	.0	24.3	19.4	9.7	29.2	53.4	189.5	155.5	529.6	126.3	.0
55	.0	2.0	.0	.0	.0	.0	.0	.0	4.0	.0	.0	.0	1.0	3.0	10.0	24.0	5.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.2	.0	.0
	.0	9.7	.0	.0	.0	.0	.0	.0	19.4	.0	.0	.0	4.9	14.6	48.6	116.6	24.3	.0
56	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	1.0	.0	.0	2.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	9.7	4.9	.0	.0	9.7

ALL TRIPS

80

WALKTRIP(X,Y) MATRIX - ALL DAYS

Destination Zone →	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0	12.0	3.0	.0	.0	.0	.0	1.0	5.0	.0	3.0	.0	1.0	13.0	5.0	4.0	8.0	3.0	.0	.0
1	4.0	20.0	.0	.0	7.0	.0	.0	10.0	.0	.0	.0	.0	20.0	5.0	10.0	10.0	.0	.0	1.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Origin Zone \ Destination Zone →	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
4	1.0	10.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	4.0	2.0	.0	.0
5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0	4.0	.0	.0
6	.0	.0	.0	.0	.0	.0	.0	6.0	.0	.0	.0	.0	11.0	4.0	21.0	12.0	2.0	.0	.0
7	4.0	4.0	.0	.0	.0	1.0	6.0	1.0	.0	2.0	.0	.0	79.0	17.0	3.0	6.0	3.0	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	1.0	3.0	.0	.0	.0	.0	16.0	1.0	1.0	4.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	5.0	2.0	1.0	.0	.0	.0	.0
11	1.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	14.0	.0	.0	.0	.0	.0	.0
12	14.0	46.0	.0	.0	1.0	1.0	12.0	52.0	.0	19.0	4.0	10.0	41.0	35.0	57.0	61.0	4.0	3.0	1.0
13	5.0	3.0	.0	.0	.0	1.0	2.0	8.0	.0	.0	1.0	1.0	54.0	2.0	3.0	2.0	4.0	3.0	.0
14	3.0	8.0	.0	.0	.0	.0	19.0	3.0	.0	2.0	.0	.0	64.0	10.0	1.0	3.0	.0	4.0	.0
15	10.0	14.0	.0	.0	4.0	.0	10.0	6.0	.0	1.0	1.0	.0	99.0	9.0	9.0	17.0	5.0	2.0	.0
16	2.0	.0	1.0	.0	3.0	9.0	2.0	.0	.0	.0	.0	1.0	5.0	1.0	.0	6.0	7.0	.0	1.0
17	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	3.0	1.0	5.0	1.0	.0	.0	.0
18	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	1.0	3.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	8.0	.0	7.0	.0	1.0	1.0	.0
20	.0	4.0	.0	.0	2.0	.0	1.0	6.0	.0	.0	.0	.0	20.0	4.0	2.0	6.0	6.0	1.0	.0
21	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	1.0	.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0
23	1.0	14.0	.0	1.0	3.0	.0	3.0	2.0	.0	7.0	1.0	2.0	98.0	2.0	1.0	4.0	6.0	2.0	.0
24	1.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	11.0	2.0	1.0	4.0	1.0	.0	.0
25	.0	1.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	10.0	.0	.0	4.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	7.0	17.0	.0	.0	1.0	.0	9.0	22.0	.0	27.0	3.0	2.0	271.0	13.0	14.0	104.0	.0	3.0	.0
28	1.0	2.0	.0	.0	.0	.0	.0	1.0	.0	.0	5.0	1.0	48.0	2.0	2.0	6.0	1.0	.0	.0
29	4.0	6.0	.0	.0	.0	.0	.0	3.0	.0	5.0	2.0	.0	60.0	4.0	4.0	7.0	.0	1.0	.0
30	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	8.0	.0	.0	3.0	.0	.0	.0
31	4.0	1.0	.0	.0	.0	.0	.0	3.0	.0	3.0	.0	.0	15.0	1.0	.0	4.0	.0	.0	.0
32	13.0	1.0	.0	.0	.0	1.0	.0	1.0	.0	1.0	.0	1.0	31.0	3.0	1.0	2.0	.0	.0	.0
33	6.0	6.0	.0	.0	.0	.0	.0	3.0	.0	3.0	3.0	.0	53.0	.0	5.0	8.0	4.0	.0	.0
34	5.0	4.0	.0	.0	.0	.0	.0	3.0	.0	9.0	3.0	.0	52.0	2.0	2.0	2.0	2.0	.0	.0
35	2.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	6.0	1.0	4.0	2.0	.0	2.0	1.0
36	6.0	4.0	.0	.0	.0	1.0	8.0	10.0	1.0	8.0	1.0	2.0	71.0	4.0	3.0	7.0	5.0	1.0	.0
37	1.0	4.0	.0	.0	1.0	.0	.0	2.0	.0	2.0	.0	1.0	25.0	.0	2.0	1.0	.0	.0	.0
38	5.0	3.0	.0	.0	1.0	1.0	2.0	4.0	.0	2.0	1.0	1.0	24.0	2.0	4.0	2.0	5.0	1.0	.0
39	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	7.0	.0	2.0	2.0	.0	.0	.0
40	3.0	4.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	28.0	3.0	7.0	5.0	.0	.0	2.0
41	1.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	4.0	1.0	1.0	2.0	.0	.0	.0
42	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	1.0	.0	.0	.0	.0
43	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
44	4.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
45	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
46	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
47	1.0	2.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	3.0	2.0	.0	6.0	.0	.0	.0
48	3.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	8.0	6.0	4.0	2.0	.0	.0	.0
49	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0	1.0	.0	3.0	.0	.0	.0
50	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	2.0	.0	.0
51	1.0	2.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	2.0	1.0	2.0	2.0	.0	.0	.0
52	23.0	4.0	.0	.0	.0	1.0	.0	3.0	.0	.0	.0	.0	18.0	3.0	13.0	13.0	1.0	.0	.0
53	8.0	3.0	.0	.0	.0	.0	1.0	1.0	.0	.0	1.0	.0	15.0	4.0	3.0	4.0	1.0	.0	.0
54	18.0	5.0	.0	.0	2.0	.0	.0	5.0	.0	.0	.0	.0	35.0	9.0	11.0	39.0	.0	.0	.0
55	3.0	1.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	9.0	.0	.0	9.0	.0	.0	.0
56	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Dest. Zone →	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
0	1.0	1.0	1.0	.0	3.0	1.0	1.0	.0	13.0	2.0	7.0	.0	2.0	12.0	6.0	7.0	2.0	8.0	2.0	4.0
1	1.0	5.0	.0	.0	16.0	.0	1.0	.0	16.0	5.0	10.0	2.0	2.0	2.0	3.0	5.0	2.0	3.0	2.0	3.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

WALK TRIPS

Origin Zone \ Destination Zone	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
3	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0
5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	1.0	.0	1.0
6	.0	2.0	.0	.0	2.0	.0	.0	.0	12.0	1.0	1.0	.0	.0	.0	2.0	1.0	1.0	4.0	3.0	1.0
7	.0	2.0	.0	1.0	3.0	.0	.0	.0	17.0	1.0	2.0	.0	2.0	2.0	6.0	3.0	.0	11.0	.0	4.0
8	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	1.0	1.0	.0	3.0	.0	.0	.0	27.0	4.0	7.0	.0	3.0	1.0	2.0	5.0	1.0	5.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	3.0	5.0	1.0	.0	.0	2.0	1.0	1.0	.0	1.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	3.0	2.0	.0
12	8.0	17.0	2.0	1.0	65.0	20.0	6.0	.0	184.0	36.0	43.0	11.0	11.0	32.0	22.0	38.0	5.0	87.0	18.0	36.0
13	.0	3.0	1.0	.0	2.0	2.0	1.0	.0	10.0	1.0	2.0	1.0	1.0	3.0	3.0	3.0	1.0	9.0	.0	3.0
14	7.0	3.0	1.0	.0	.0	.0	.0	.0	14.0	1.0	3.0	.0	.0	6.0	7.0	3.0	2.0	6.0	6.0	2.0
15	1.0	4.0	2.0	3.0	18.0	1.0	5.0	.0	81.0	3.0	5.0	2.0	3.0	3.0	9.0	3.0	.0	17.0	3.0	5.0
16	.0	6.0	1.0	.0	8.0	.0	1.0	.0	3.0	.0	1.0	1.0	.0	3.0	3.0	1.0	.0	7.0	.0	5.0
17	.0	1.0	.0	.0	2.0	.0	.0	.0	3.0	.0	1.0	.0	1.0	.0	.0	1.0	2.0	.0	.0	1.0
18	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	1.0	1.0	.0	.0	1.0	.0	1.0	.0	3.0	.0	.0	.0	.0	1.0	.0	1.0	1.0	1.0	1.0	.0
20	2.0	3.0	.0	.0	4.0	1.0	.0	.0	2.0	2.0	.0	1.0	1.0	1.0	2.0	2.0	1.0	5.0	.0	3.0
21	.0	1.0	.0	.0	3.0	.0	.0	.0	2.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	1.0
22	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	3.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
23	1.0	4.0	1.0	.0	5.0	17.0	.0	.0	19.0	3.0	6.0	2.0	1.0	4.0	6.0	7.0	1.0	15.0	3.0	22.0
24	.0	.0	.0	.0	12.0	.0	11.0	.0	26.0	2.0	4.0	.0	1.0	6.0	9.0	11.0	.0	21.0	5.0	11.0
25	.0	.0	.0	.0	.0	10.0	.0	.0	4.0	1.0	.0	.0	1.0	2.0	.0	1.0	.0	2.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	8.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
27	4.0	4.0	1.0	.0	32.0	30.0	4.0	7.0	27.0	14.0	21.0	13.0	23.0	26.0	46.0	21.0	4.0	64.0	4.0	16.0
28	.0	3.0	.0	.0	2.0	1.0	2.0	.0	15.0	12.0	17.0	5.0	5.0	4.0	6.0	3.0	.0	7.0	.0	3.0
29	.0	1.0	.0	.0	10.0	6.0	1.0	.0	28.0	19.0	12.0	12.0	4.0	9.0	6.0	7.0	.0	14.0	1.0	1.0
30	1.0	3.0	.0	.0	1.0	1.0	.0	.0	12.0	4.0	17.0	.0	8.0	2.0	3.0	4.0	.0	1.0	1.0	3.0
31	.0	.0	.0	.0	3.0	1.0	.0	.0	15.0	5.0	4.0	9.0	3.0	9.0	4.0	5.0	.0	11.0	1.0	1.0
32	1.0	1.0	.0	.0	4.0	3.0	1.0	.0	24.0	5.0	7.0	3.0	6.0	31.0	8.0	20.0	1.0	17.0	4.0	11.0
33	.0	.0	1.0	.0	5.0	5.0	.0	.0	35.0	5.0	4.0	2.0	.0	15.0	.0	13.0	1.0	18.0	2.0	8.0
34	.0	1.0	1.0	.0	4.0	10.0	.0	.0	23.0	6.0	7.0	4.0	1.0	20.0	8.0	4.0	.0	19.0	2.0	14.0
35	.0	.0	.0	.0	2.0	.0	.0	.0	1.0	1.0	2.0	.0	.0	3.0	1.0	3.0	4.0	3.0	.0	.0
36	2.0	4.0	1.0	.0	19.0	14.0	2.0	2.0	71.0	6.0	20.0	3.0	6.0	10.0	20.0	20.0	3.0	8.0	13.0	19.0
37	1.0	1.0	.0	.0	1.0	6.0	.0	.0	4.0	.0	1.0	2.0	1.0	1.0	1.0	1.0	.0	14.0	3.0	1.0
38	.0	2.0	1.0	.0	19.0	5.0	.0	.0	11.0	3.0	2.0	3.0	1.0	9.0	10.0	13.0	1.0	24.0	1.0	13.0
39	.0	.0	.0	.0	4.0	2.0	.0	.0	16.0	1.0	2.0	.0	.0	.0	1.0	.0	.0	2.0	.0	.0
40	.0	.0	.0	1.0	9.0	2.0	.0	.0	17.0	1.0	4.0	2.0	1.0	3.0	1.0	.0	.0	8.0	6.0	3.0
41	1.0	.0	.0	.0	.0	.0	.0	.0	5.0	1.0	.0	.0	.0	.0	.0	1.0	2.0	1.0	2.0	.0
42	.0	.0	.0	.0	.0	.0	.0	.0	2.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0
43	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
44	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0
45	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
46	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
47	1.0	.0	.0	.0	1.0	.0	1.0	.0	11.0	1.0	5.0	.0	1.0	.0	2.0	6.0	.0	8.0	1.0	1.0
48	.0	.0	.0	.0	12.0	.0	.0	.0	17.0	1.0	9.0	1.0	.0	.0	5.0	6.0	.0	6.0	.0	3.0
49	.0	.0	.0	.0	2.0	.0	.0	.0	6.0	.0	2.0	.0	.0	.0	1.0	.0	.0	2.0	.0	.0
50	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	.0
51	.0	.0	.0	1.0	.0	1.0	2.0	.0	11.0	.0	3.0	.0	1.0	.0	.0	2.0	.0	1.0	1.0	.0
52	.0	2.0	.0	.0	21.0	.0	3.0	.0	44.0	9.0	16.0	5.0	4.0	4.0	6.0	14.0	3.0	16.0	1.0	8.0
53	.0	2.0	.0	.0	5.0	1.0	1.0	.0	9.0	1.0	1.0	.0	1.0	5.0	1.0	6.0	2.0	5.0	5.0	1.0
54	1.0	3.0	1.0	.0	14.0	1.0	.0	.0	94.0	2.0	9.0	8.0	10.0	2.0	14.0	13.0	1.0	13.0	6.0	6.0
55	.0	.0	.0	.0	3.0	.0	.0	.0	21.0	1.0	3.0	4.0	2.0	3.0	5.0	5.0	.0	6.0	.0	2.0
56	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0

Dest. Zone \	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
0	.0	3.0	.0	.0	1.0	2.0	.0	.0	1.0	2.0	2.0	.0	1.0	16.0	1.0	11.0	5.0	.0
1	.0	9.0	.0	.0	.0	2.0	.0	.0	4.0	.0	.0	.0	.0	2.0	2.0	2.0	1.0	.0

WALK TRIPS

Origin Zone \ Destination Zone →	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	2.0	1.0	.0
5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
6	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	1.0	.0	.0	.0
7	2.0	.0	1.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	3.0	1.0	1.0	2.0	1.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	1.0	.0
12	6.0	23.0	7.0	1.0	.0	.0	.0	.0	12.0	12.0	6.0	.0	12.0	69.0	12.0	97.0	18.0	1.0
13	1.0	4.0	2.0	.0	.0	.0	.0	.0	3.0	4.0	1.0	.0	2.0	4.0	4.0	5.0	1.0	.0
14	4.0	4.0	1.0	1.0	.0	.0	.0	.0	2.0	4.0	.0	.0	2.0	7.0	1.0	5.0	.0	.0
15	4.0	5.0	.0	.0	.0	.0	.0	.0	4.0	5.0	.0	.0	5.0	4.0	4.0	22.0	4.0	.0
16	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	2.0	.0	1.0	.0	.0	1.0	.0
17	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	2.0	.0	1.0	.0	.0
20	.0	1.0	1.0	.0	.0	.0	.0	.0	2.0	1.0	.0	.0	.0	1.0	2.0	2.0	2.0	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	.0	1.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
23	4.0	3.0	.0	.0	.0	.0	.0	.0	2.0	10.0	4.0	.0	1.0	15.0	5.0	12.0	3.0	.0
24	1.0	6.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.0	.0	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	2.0	1.0	2.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	8.0	11.0	4.0	2.0	.0	1.0	.0	.0	10.0	7.0	4.0	1.0	9.0	31.0	18.0	61.0	14.0	.0
28	.0	1.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	1.0	.0	4.0	2.0	2.0	2.0	.0
29	1.0	5.0	1.0	.0	.0	.0	.0	.0	2.0	10.0	2.0	.0	3.0	9.0	2.0	7.0	3.0	.0
30	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.0	3.0	7.0	2.0	.0
31	1.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	1.0	4.0	1.0	.0
32	.0	3.0	.0	.0	.0	.0	.0	.0	.0	2.0	1.0	.0	.0	3.0	4.0	1.0	3.0	.0
33	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	6.0	2.0	.0	1.0	5.0	2.0	15.0	2.0	.0
34	1.0	1.0	1.0	1.0	.0	.0	.0	.0	5.0	9.0	.0	1.0	1.0	13.0	10.0	8.0	5.0	.0
35	.0	1.0	1.0	.0	.0	1.0	.0	.0	.0	.0	1.0	.0	1.0	1.0	.0	2.0	.0	.0
36	5.0	4.0	3.0	.0	.0	.0	.0	.0	9.0	5.0	1.0	.0	2.0	21.0	5.0	16.0	1.0	.0
37	.0	7.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	2.0	3.0	6.0	.0	.0
38	.0	4.0	1.0	.0	.0	.0	.0	.0	.0	3.0	.0	.0	1.0	7.0	2.0	9.0	2.0	.0
39	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	6.0	.0	.0
40	1.0	6.0	1.0	1.0	.0	1.0	1.0	.0	.0	2.0	.0	.0	.0	4.0	.0	17.0	2.0	.0
41	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	4.0	.0	3.0	.0	.0
42	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	1.0	.0	.0	.0
43	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0
44	1.0	.0	.0	.0	.0	.0	1.0	1.0	4.0	1.0	1.0	.0	.0	4.0	1.0	4.0	.0	.0
45	.0	2.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
46	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
47	.0	1.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	8.0	2.0	.0
48	.0	2.0	1.0	.0	.0	1.0	.0	.0	2.0	3.0	.0	4.0	1.0	1.0	7.0	6.0	1.0	.0
49	.0	1.0	.0	1.0	.0	2.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	1.0	.0	.0
50	1.0	.0	.0	.0	.0	.0	.0	.0	.0	4.0	1.0	.0	.0	5.0	3.0	6.0	.0	.0
51	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	11.0	2.0	8.0	1.0	.0
52	.0	10.0	2.0	.0	.0	3.0	1.0	.0	.0	3.0	1.0	6.0	5.0	16.0	12.0	43.0	3.0	3.0
53	.0	.0	.0	1.0	1.0	2.0	.0	.0	1.0	8.0	.0	3.0	3.0	15.0	11.0	33.0	9.0	.0
54	9.0	19.0	1.0	1.0	1.0	7.0	.0	.0	4.0	3.0	2.0	6.0	9.0	31.0	29.0	106.0	25.0	.0
55	.0	1.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	1.0	2.0	10.0	23.0	5.0	.0
56	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	1.0

AUSTIN (1977) MATRIX - ALL DAYS

BUSTRIP (X,Y) MATRIX - ALL DAYS

Origin Zone \ Destination Zone →	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0	6.0	2.0	.0	.0	1.0	.0	1.0	1.0	.0	.0	.0	1.0	1.0	1.0	2.0	.0	1.0	.0	.0
1	2.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	31.0	3.0	6.0	11.0	.0	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7	2.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	3.0	72.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
16	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
19	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	.0	3.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	2.0	12.0	.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
28	.0	3.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	1.0	5.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
31	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
32	2.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
33	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
34	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	.0	.0	.0
35	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
36	1.0	16.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
37	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
38	1.0	3.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
39	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
40	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
41	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
42	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
43	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
44	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
45	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
46	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
47	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
49	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
50	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
51	.0	3.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0
52	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	11.0	1.0	1.0	3.0	.0	.0	.0
53	.0	4.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
54	1.0	7.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	9.0	.0	.0	8.0	.0	.0	.0
55	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

BUS TRIPS

BUS TRIPS

Origin Zone \ Dest. Zone	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
0	.0	.0	.0	.0	1.0	.0	.0	.0	1.0	.0	1.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0
1	2.0	5.0	.0	.0	8.0	.0	.0	.0	37.0	5.0	4.0	2.0	2.0	5.0	2.0	6.0	2.0	29.0	5.0	3.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0
19	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
28	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
31	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
33	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
34	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
35	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
36	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
37	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
38	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
39	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
40	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
41	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
42	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
43	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
44	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
45	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
46	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
47	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
49	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
50	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
51	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0
52	.0	.0	.0	.0	.0	.0	.0	.0	4.0	.0	.0	.0	.0	.0	.0	1.0	.0	3.0	.0	.0
53	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0
54	.0	.0	.0	.0	.0	.0	.0	.0	9.0	.0	1.0	.0	.0	1.0	2.0	.0	.0	3.0	.0	.0

Origin Zone

Dest. Zone	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4	4.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
28	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
31	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
33	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
34	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
35	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
36	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
37	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
38	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
39	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
40	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
41	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
42	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
43	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
44	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
45	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
46	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
47	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
49	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
50	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
51	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
52	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
53	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
54	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
55	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
56	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

BUS TRIPS

54	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	
55	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	
56	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	

CARTRIP(X,Y) MATRIX - ALL DAYS

CAR TRIPS

Origin Zone \ Destination Zone →	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0	43.0	45.0	.0	.0	12.0	33.0	79.0	25.0	.0	65.0	18.0	.0	56.0	14.0	32.0	37.0	47.0	3.0	7.0
1	55.0	1.0	.0	.0	1.0	.0	10.0	4.0	.0	5.0	4.0	1.0	21.0	1.0	.0	3.0	.0	.0	1.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0
3	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
4	15.0	1.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	1.0	.0	1.0
5	32.0	.0	.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	1.0	.0	.0	.0	5.0	.0	.0
6	43.0	7.0	.0	.0	1.0	.0	.0	.0	.0	1.0	2.0	.0	3.0	.0	.0	.0	.0	2.0	.0
7	25.0	3.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	57.0	4.0	.0	.0	2.0	1.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0
10	15.0	1.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0
12	64.0	23.0	.0	1.0	3.0	.0	.0	.0	.0	.0	.0	.0	2.0	1.0	2.0	4.0	3.0	4.0	.0
13	16.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	2.0	.0	.0	.0	.0
14	33.0	2.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	5.0	.0	1.0	.0	.0	3.0	.0
15	41.0	2.0	.0	.0	.0	.0	2.0	1.0	.0	1.0	1.0	.0	7.0	.0	.0	.0	1.0	2.0	.0
16	47.0	.0	.0	.0	1.0	4.0	.0	.0	.0	.0	.0	2.0	5.0	1.0	.0	.0	6.0	.0	.0
17	6.0	.0	.0	1.0	.0	1.0	3.0	.0	.0	1.0	2.0	.0	.0	.0	3.0	1.0	.0	.0	1.0
18	8.0	1.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	2.0	.0
19	11.0	.0	.0	.0	1.0	1.0	1.0	.0	.0	.0	.0	.0	2.0	.0	1.0	.0	1.0	2.0	.0
20	23.0	3.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	1.0	5.0	4.0	.0	.0	1.0	.0	.0
21	3.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
22	5.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	1.0	.0	.0	.0
23	38.0	10.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	1.0	2.0	1.0
24	106.0	.0	.0	.0	1.0	1.0	1.0	.0	.0	1.0	.0	.0	2.0	.0	.0	1.0	1.0	3.0	.0
25	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
26	7.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	26.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	2.0	.0
28	28.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	2.0	.0
29	24.0	4.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	2.0	.0	.0	.0	.0	1.0	.0
30	8.0	6.0	.0	.0	2.0	.0	.0	.0	.0	.0	1.0	.0	4.0	.0	.0	.0	.0	.0	1.0
31	18.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	2.0	.0	.0	.0	1.0
32	37.0	2.0	.0	.0	1.0	5.0	1.0	.0	.0	.0	.0	.0	1.0	1.0	4.0	1.0	3.0	1.0	.0
33	9.0	3.0	2.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	2.0	.0	.0
34	17.0	.0	.0	.0	.0	.0	.0	3.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	1.0
35	9.0	1.0	.0	.0	.0	.0	3.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	.0
36	18.0	6.0	.0	1.0	1.0	2.0	2.0	.0	.0	.0	.0	2.0	2.0	.0	.0	1.0	5.0	.0	.0
37	10.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	1.0	.0	.0
38	52.0	.0	.0	1.0	1.0	2.0	1.0	2.0	.0	.0	.0	1.0	2.0	.0	1.0	.0	4.0	.0	.0
39	8.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	6.0	.0	.0	.0	.0	.0	.0
40	29.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	1.0
41	11.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	1.0	.0	.0	.0	.0
42	6.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0
43	1.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
44	4.0	8.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
45	2.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	.0	.0
46	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
47	7.0	1.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0
48	22.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	2.0	1.0	.0	.0
49	6.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	1.0	1.0	.0	.0	.0
50	6.0	3.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Origin Zone	Destination Zone → 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
51	14.0	3.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	1.0	.0	.0
52	45.0	10.0	.0	.0	3.0	.0	.0	.0	.0	.0	.0	.0	17.0	1.0	.0	7.0	1.0	1.0	.0
53	19.0	6.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	3.0	1.0	2.0	.0	1.0	1.0	.0
54	37.0	5.0	.0	.0	2.0	.0	1.0	.0	.0	.0	.0	.0	12.0	1.0	.0	4.0	1.0	1.0	.0
55	18.0	4.0	.0	.0	1.0	.0	2.0	.0	.0	.0	.0	.0	1.0	.0	.0	4.0	1.0	.0	1.0
56	1.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Origin Zone	Dest. Zone → 0	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
	0	12.0	17.0	7.0	6.0	32.0	135.0	2.0	12.0	21.0	26.0	28.0	14.0	23.0	39.0	13.0	18.0	11.0	17.0	8.0	44.0
	1	1.0	.0	.0	.0	8.0	4.0	.0	.0	3.0	.0	4.0	2.0	.0	2.0	1.0	.0	.0	5.0	.0	1.0
	2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0	.0	.0	.0	.0
	4	1.0	1.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	2.0	.0	5.0	.0	.0	.0	.0	1.0	.0
	5	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	4.0	.0	.0	.0	3.0	1.0	1.0
	6	1.0	.0	.0	.0	.0	2.0	.0	.0	1.0	.0	1.0	.0	1.0	.0	.0	.0	2.0	1.0	1.0	.0
	7	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	3.0
	8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	9	.0	2.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	11	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	.0	.0	.0	.0	.0	2.0
	12	.0	2.0	.0	1.0	3.0	2.0	.0	.0	2.0	2.0	2.0	6.0	1.0	2.0	.0	1.0	.0	1.0	.0	3.0
	13	1.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	2.0
	14	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	2.0	2.0	1.0	.0	1.0	1.0	.0	1.0
	15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	1.0	1.0	2.0	.0	1.0
	16	2.0	2.0	.0	.0	1.0	.0	1.0	.0	.0	.0	.0	.0	.0	5.0	1.0	.0	.0	10.0	.0	5.0
	17	2.0	.0	.0	.0	1.0	6.0	.0	.0	3.0	2.0	1.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0
	18	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	1.0	.0	1.0	.0	.0	.0	.0
	19	.0	1.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	1.0	.0	1.0	1.0	1.0	.0	1.0
	20	1.0	2.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	2.0
	21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0
	23	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	1.0	.0	.0	.0	.0	.0	1.0
	24	1.0	.0	.0	.0	.0	1.0	.0	.0	1.0	.0	1.0	.0	.0	1.0	1.0	.0	.0	.0	.0	.0
	25	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	27	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	28	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0
	29	2.0	.0	.0	1.0	1.0	.0	.0	.0	1.0	1.0	1.0	.0	.0	1.0	1.0	.0	.0	.0	.0	1.0
	30	.0	1.0	.0	1.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0
	31	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	32	2.0	2.0	.0	.0	1.0	.0	.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	1.0	.0	1.0
	33	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	34	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
	35	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0
	36	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0	.0	.0	.0
	37	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	38	.0	2.0	.0	.0	.0	1.0	.0	.0	1.0	.0	2.0	.0	.0	1.0	.0	1.0	.0	1.0	.0	.0
	39	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	40	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0	.0	1.0	.0	.0	.0	.0	.0	.0
	41	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	42	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	43	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	44	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
	45	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
	46	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
	47	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	2.0
	48	.0	.0	.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0
	49	.0	.0	.0	.0	1.0	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

CAR TRIPS

Origin Zone \ Destination Zone	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
50	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
51	.0	1.0	.0	.0	.0	2.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
52	.0	.0	1.0	.0	1.0	1.0	.0	.0	.0	.0	.0	1.0	.0	1.0	1.0	.0	.0	2.0	.0	.0
53	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	1.0	.0
54	1.0	5.0	.0	.0	2.0	1.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0	.0
55	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	1.0
56	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Origin Zone \ Dest. Zone	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
0	5.0	19.0	12.0	11.0	.0	1.0	1.0	.0	3.0	15.0	4.0	2.0	12.0	42.0	17.0	27.0	10.0	1.0
1	3.0	.0	1.0	1.0	2.0	5.0	.0	.0	1.0	2.0	1.0	3.0	4.0	8.0	7.0	6.0	5.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	1.0	.0	.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	2.0	1.0	2.0	1.0	.0
5	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	2.0	.0	1.0	.0	.0	.0	.0
6	1.0	.0	1.0	1.0	.0	.0	1.0	.0	.0	.0	1.0	.0	1.0	1.0	1.0	.0	1.0	.0
7	1.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	1.0	3.0	.0	1.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	2.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0
12	5.0	1.0	1.0	.0	.0	.0	.0	.0	.0	2.0	2.0	.0	3.0	19.0	3.0	9.0	4.0	.0
13	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	1.0	2.0	.0	.0	.0
14	.0	.0	1.0	.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	1.0	3.0	1.0	.0	.0
15	1.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0	.0	.0	1.0	3.0	2.0	.0
16	.0	.0	.0	.0	.0	1.0	1.0	.0	1.0	1.0	.0	.0	1.0	1.0	2.0	1.0	1.0	.0
17	.0	.0	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	.0
18	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0
19	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	.0	.0	1.0	.0	.0	.0
20	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.0	.0	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0
23	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0	1.0	1.0	2.0	1.0	.0
24	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	.0	.0	.0	.0	2.0	1.0	3.0	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	1.0	.0	.0
28	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	1.0	2.0	.0	.0	.0	1.0	.0	.0	.0
30	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
31	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
32	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0
33	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
34	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	2.0	1.0	.0
35	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
36	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	.0	2.0	.0	1.0	1.0	.0
37	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
38	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
39	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
40	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	1.0	.0
41	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
42	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	1.0
43	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
44	1.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	2.0	1.0	1.0	1.0	.0
45	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
46	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
47	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	2.0	.0
48	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0

CAR TRIPS

Destination Zone →	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
49	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	.0
50	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
51	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	2.0	1.0	.0
52	.0	.0	.0	.0	.0	4.0	.0	.0	.0	1.0	.0	.0	.0	1.0	.0	3.0	.0	.0
53	.0	1.0	.0	1.0	.0	3.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0
54	.0	1.0	.0	.0	.0	3.0	.0	.0	1.0	.0	.0	.0	2.0	3.0	1.0	1.0	.0	.0
55	.0	1.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
56	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0

BIKETRIP(X,Y) MATRIX - ALL DAYS

Origin Zone ↓ / Destination Zone →	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
0	3.0	2.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	1.0	1.0	3.0	1.0	.0	.0	.0
1	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7	2.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
12	1.0	3.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	3.0	.0	.0	.0
13	2.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0
14	2.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0	.0	.0	.0	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	3.0	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
18	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
20	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	2.0	1.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	2.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	6.0	.0	.0	2.0	.0	1.0	.0
28	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0
29	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	1.0	.0	.0	.0	.0
30	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
31	3.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0
33	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	.0	.0	.0
34	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0
35	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0
36	3.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
37	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
38	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0
39	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	1.0	.0	.0	.0
40	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
41	1.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
42	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
43	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
44	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
45	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

BIKE TRIPS

Origin Zone	Destination Zone → 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
46	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
47	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
48	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0
49	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
50	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
51	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0
52	1.0	.0	.0	.0	.0	.0	.0	3.0	.0	.0	.0	.0	2.0	4.0	.0	1.0	.0	.0	.0
53	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	.0	.0
54	2.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	1.0	6.0	.0	1.0	.0
55	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0
56	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Origin Zone	Dest. Zone → 19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
0	.0	1.0	.0	.0	1.0	.0	.0	.0	5.0	.0	1.0	.0	3.0	.0	1.0	.0	.0	2.0	.0	1.0
1	.0	.0	.0	.0	2.0	.0	.0	.0	1.0	2.0	.0	.0	.0	.0	2.0	1.0	.0	1.0	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	1.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	1.0	1.0	2.0	.0	2.0
13	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	1.0	.0	.0	1.0	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	5.0	.0	.0	1.0	.0	1.0	.0	.0	.0	1.0	.0	.0
16	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
18	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	1.0
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	.0	.0	.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	1.0	.0	.0	1.0	.0	.0	.0	.0
28	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
29	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
31	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
33	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
34	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
35	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
36	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
37	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
38	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
39	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
40	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
41	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
42	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
43	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
44	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

BIKE TRIPS

Destination Zone →	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
45	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
46	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
47	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0	.0	.0	1.0	.0	1.0	.0	.0
48	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
49	.0	.0	.0	.0	1.0	.0	.0	.0	2.0	.0	1.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
50	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
51	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
52	1.0	1.0	.0	.0	3.0	.0	.0	.0	4.0	2.0	2.0	2.0	1.0	.0	1.0	.0	.0	.0	.0	.0
53	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
54	.0	.0	.0	.0	.0	.0	.0	.0	7.0	.0	.0	1.0	1.0	.0	1.0	.0	.0	1.0	.0	2.0
55	.0	.0	2.0	.0	.0	.0	.0	.0	2.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
56	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Dest. Zone → / Origin Zone	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
0	.0	1.0	1.0	.0	.0	.0	.0	.0	.0	.0	1.0	1.0	1.0	.0	.0	1.0	.0	.0
1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	2.0	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	2.0	.0	.0	.0	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	2.0	.0	.0	.0	.0	.0	.0	.0	2.0	2.0	.0	.0	.0	7.0	.0	5.0	1.0	.0
13	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	1.0	.0	.0	.0
14	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
15	1.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	3.0	.0	.0
16	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0
18	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	2.0	1.0	.0	.0	.0
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0	1.0	2.0	.0	6.0	.0	.0
28	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0
30	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	1.0	2.0	.0	.0
31	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0
32	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0
33	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0
34	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	.0	.0	.0	.0	1.0	1.0	.0	.0
35	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
36	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	1.0	.0	1.0	.0	.0
37	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
38	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
39	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
40	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.0	.0	.0
41	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
42	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
43	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

BIKE TRIPS

Destination Zone ↓	Origin Zone 44	45	46	47	48	49	50	51	52	53	54	55	56
39	0	0	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	2.0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	2.0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	1.0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	1.0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	1.0	0	0	0
54	0	0	0	0	0	0	0	0	0	0	0	0	2.0
55	0	0	0	0	0	0	0	0	0	0	0	0	0
56	0	0	0	0	0	0	0	0	0	0	0	0	0

BIKE TRIPS

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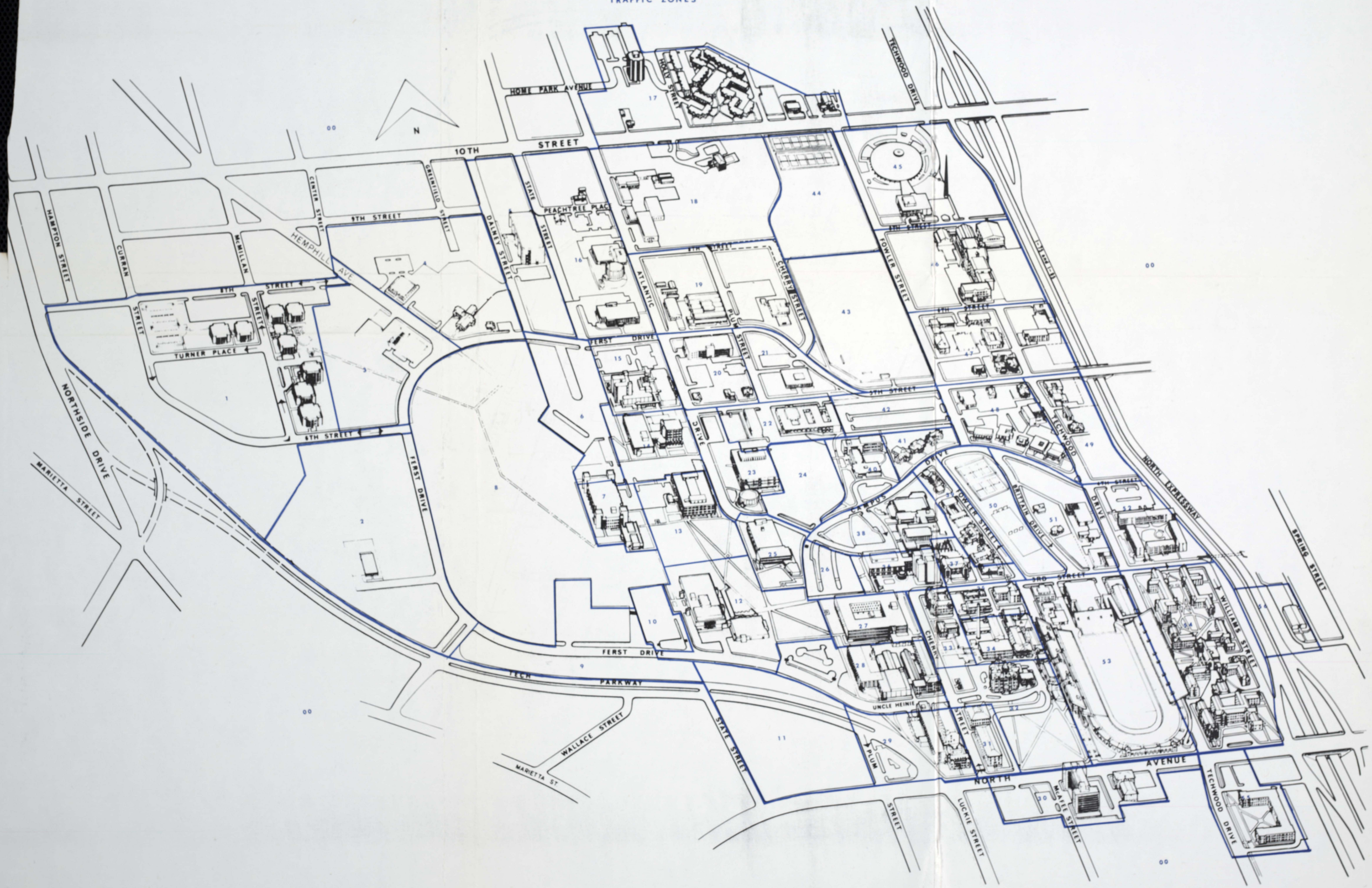
GEORGIA TECH TRANSPORTATION STUDY

TRAFFIC ZONES



GEORGIA TECH TRANSPORTATION STUDY

TRAFFIC ZONES

DESIRE LINES (10)

ALL TRIPS - AREA III DORMS

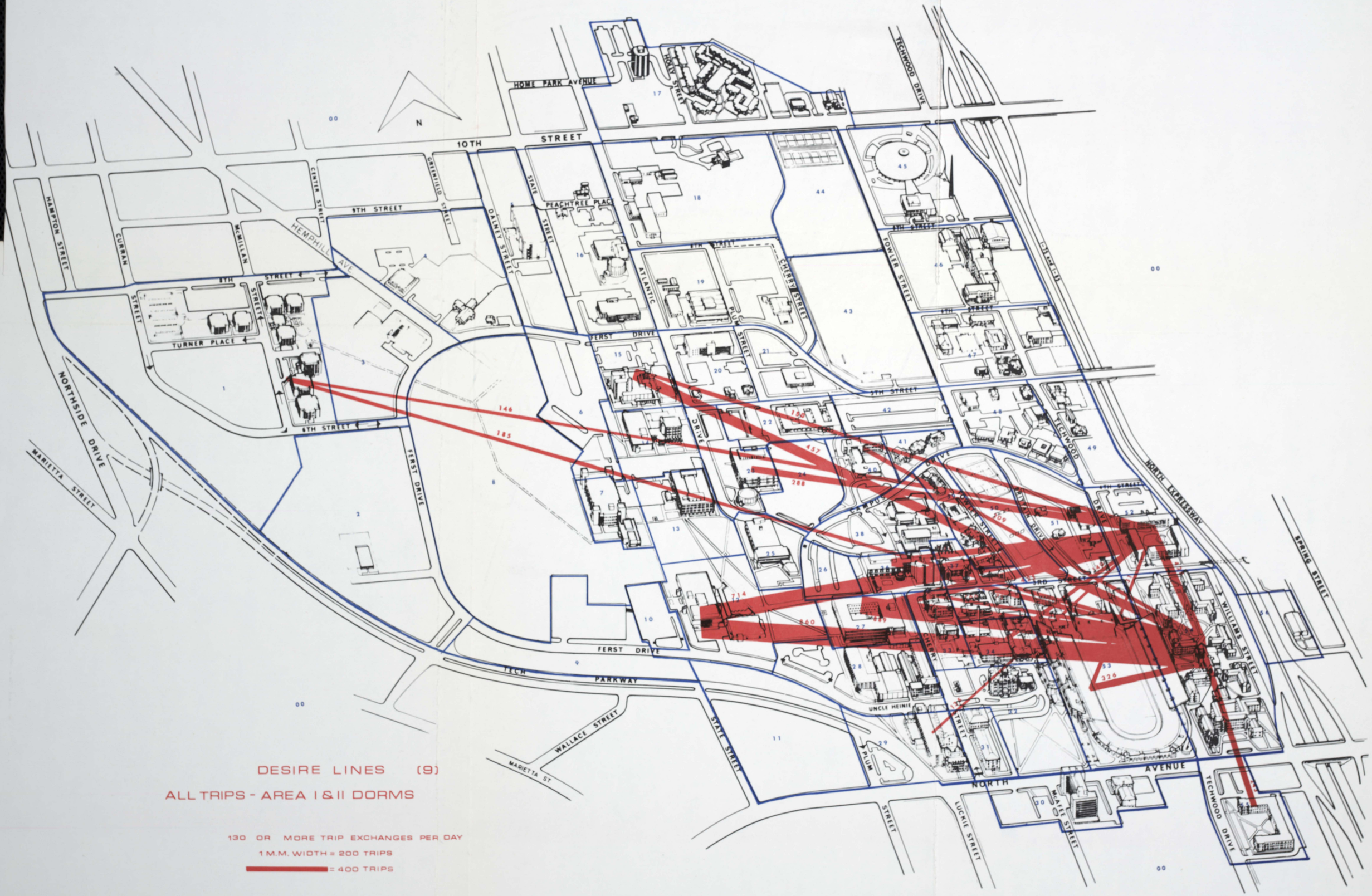
130 OR MORE TRIP EXCHANGES PER DAY

1 M.M. WIDTH = 200 TRIPS

= 400 TRIPS

GEORGIA TECH TRANSPORTATION STUDY

TRAFFIC ZONES



DESIRE LINES (9)

ALL TRIPS - AREA I & II DORMS

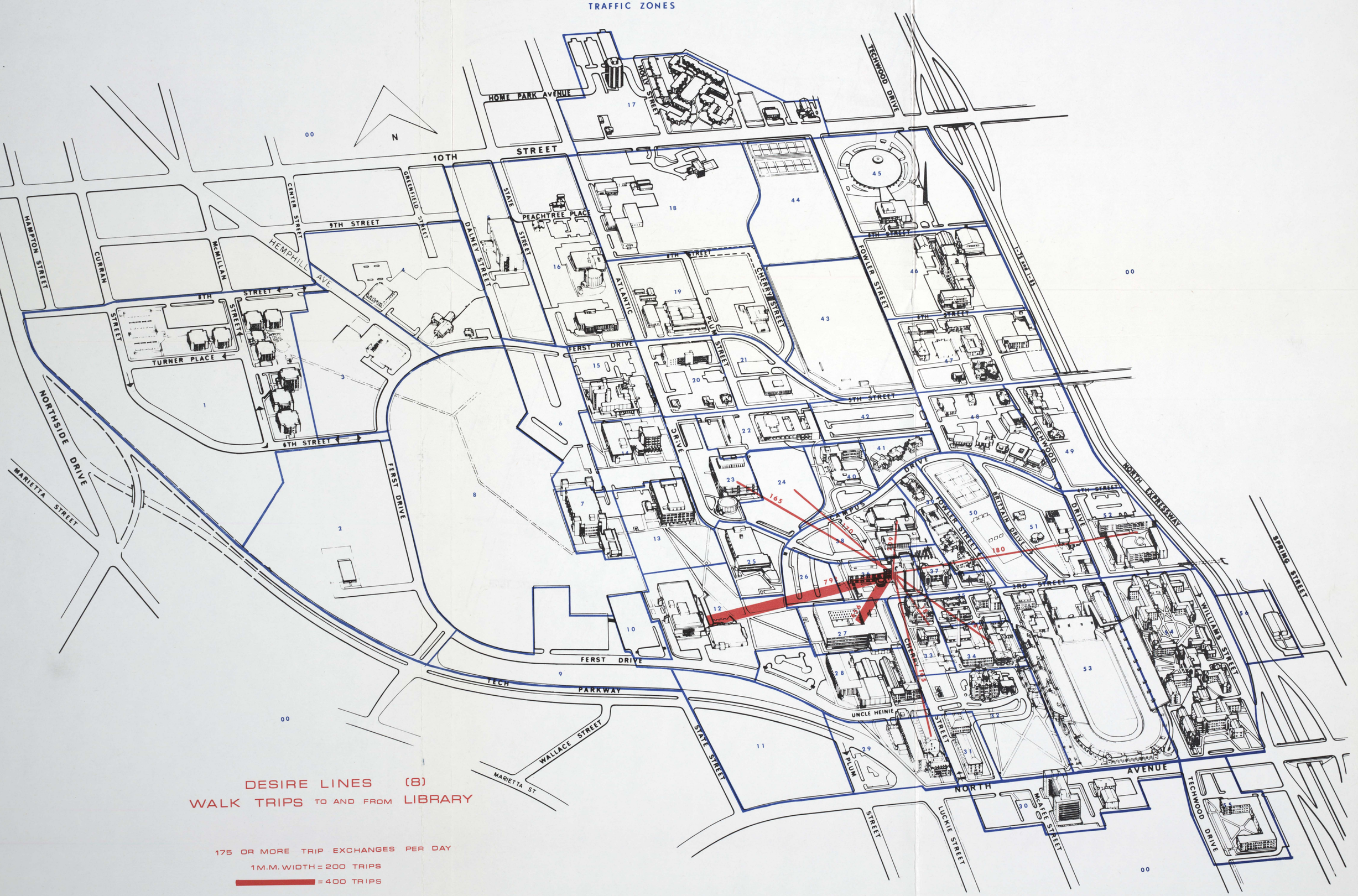
130 OR MORE TRIP EXCHANGES PER DAY

1 M.M. WIDTH = 200 TRIPS

= 400 TRIPS

GEORGIA TECH TRANSPORTATION STUDY

TRAFFIC ZONES



DESIRE LINES (8)
WALK TRIPS TO AND FROM LIBRARY

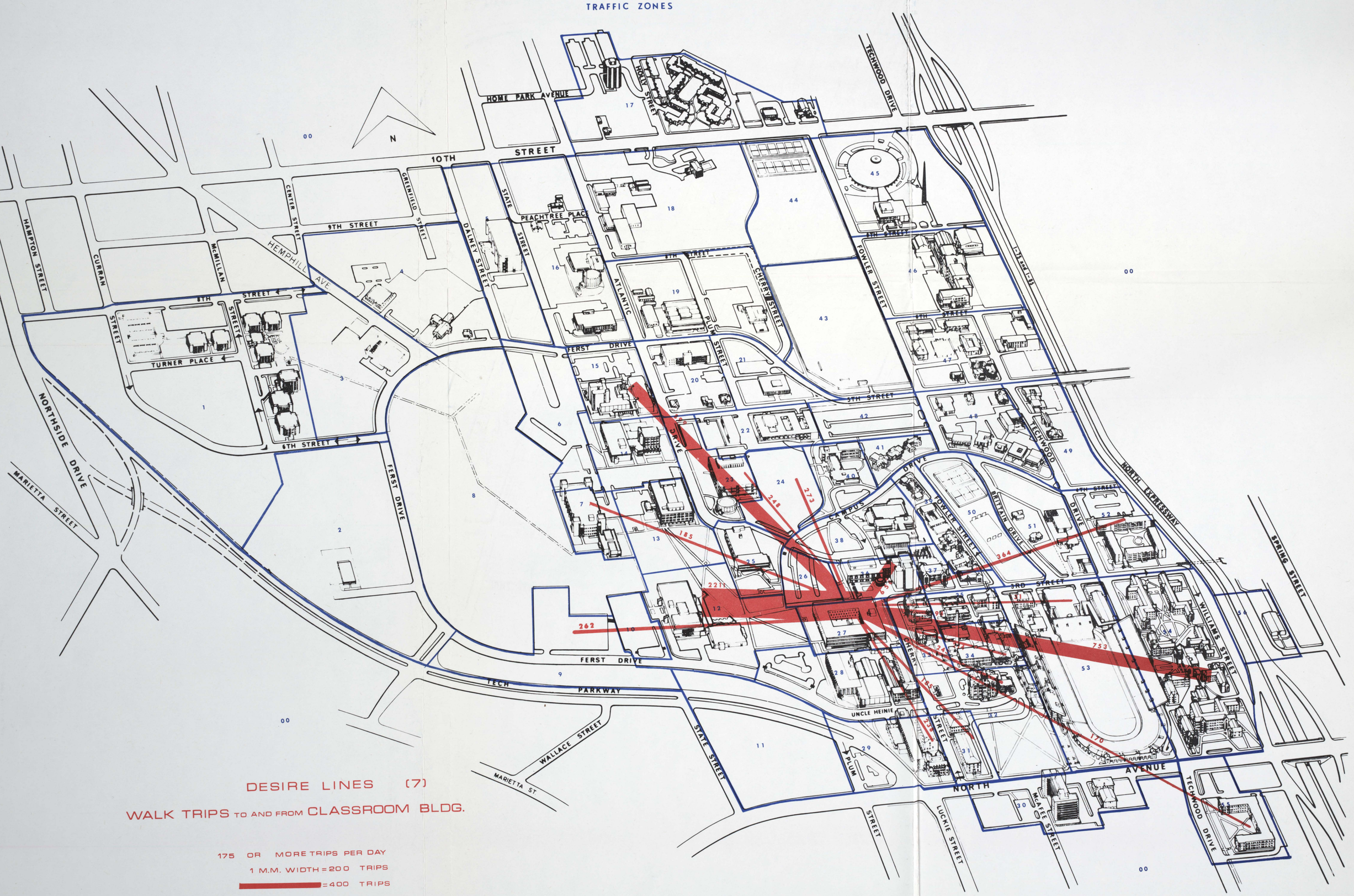
175 OR MORE TRIP EXCHANGES PER DAY

1 M.M. WIDTH = 200 TRIPS

= 400 TRIPS

GEORGIA TECH TRANSPORTATION STUDY

TRAFFIC ZONES



DESIRE LINES (7)

WALK TRIPS TO AND FROM CLASSROOM BLDG.

175 OR MORE TRIPS PER DAY

1 M.M. WIDTH = 200 TRIPS

= 400 TRIPS

GEORGIA TECH TRANSPORTATION STUDY

TRAFFIC ZONES

DESIRE LINES (6)

WALK TRIPS TO AND FROM STUDENT CENTER

175 OR MORE TRIP EXCHANGES PER DAY

1 M.M. WIDTH = 200 TRIPS

= 400 TRIPS

GEORGIA TECH TRANSPORTATION STUDY

TRAFFIC ZONES

DESIRE LINES (5)

BICYCLE TRIPS MAJOR GENERATORS

19 OR MORE TRIP EXCHANGES PER DAY

1 M.M. WIDTH = 20 TRIPS

= 40 TRIPS

GEORGIA TECH TRANSPORTATION STUDY

TRAFFIC ZONES

DESIRE LINES (4)

ALL BUS TRIPS MAJOR GENERATORS

58 OR MORE TRIP EXCHANGES PER DAY

1 M.M. WIDTH = 50 TRIPS

= 100 TRIPS

GEORGIA TECH TRANSPORTATION STUDY

TRAFFIC ZONES

GEORGIA TECH TRANSPORTATION STUDY

TRAFFIC ZONES

DESIRE LINES (2)

ALL WALK TRIPS MAJOR GENERATORS

500 OR MORE TRIP EXCHANGES PER DAY

1 M.M. WIDTH = 200 TRIPS

= 400 TRIPS

GEORGIA TECH TRANSPORTATION STUDY

TRAFFIC ZONES

DESIRE LINES (1)

ALL TRIPS MAJOR GENERATORS

400 OR MORE TRIP EXCHANGES PER DAY

WIDTH OF LINE IS PROPORTIONAL TO VOLUME

1 M.M. WIDTH =200 TRIPS

= 400 TRIPS

Final Report

Project E-20-635

"Small-Scale Research Projects in Transportation"

by

Donald O. Covault, Ph.D.
Professor of Civil Engineering
Georgia Institute of Technology
Atlanta, Georgia 30332

November 1, 1973

This report will give a brief description of the various small-scale projects undertaken during the conduct of this research for Atlanta University using funds granted to Atlanta University from the Urban Mass Transit Administration.

The projects conducted under the contract between Atlanta University and the Georgia Institute of Technology are as follows:

1. "The Emerging Needs of Bicycle Transportation." The research on this project was done by Mr. Trent Germano under the direction of Dr. Paul Wright. A paper was prepared on this subject for presentation at the 1973 Highway Research Board Meeting in Washington, D. C. A copy of this paper was submitted to you as a progress report on this project. The authors of this paper were A. Trent Germano, Paul H. Wright, R. Gary Hicks, and Paul H. Sanders. This paper was published in the Highway Research Record of the Highway Research Board.

2. "A Study of Airport User Attitudes and Characteristics in Relation to Modal Choice at the Atlanta Airport." The research on this project was done by Mr. Norman Stienman under the direction of Dr. Donald O. Covault. Copies of this report have been distributed to local transportation agencies and consulting firms in Atlanta who participated in the research and who may wish to conduct an attitude study in the near future. In addition, Atlanta University received copies of this report.

3. "Georgia Tech Circulation Study." Mr. Jeffrey Wynne and Mr. Kenneth Vourhies performed the research on this project under the direction of Dr. Donald O. Covault. Copies of this report will be distributed to Atlanta University as soon as it is released by the Georgia Tech Administration.

4. "Georgia Tech Parking Study." Research work on this study was conducted by Mr. Fredrick Punke and Mr. Michael Frey under the direction

of Dr. Paul H. Wright. Copies of this report will also be distributed to Atlanta University as soon as it is released by the Georgia Tech Administration.

In conclusion, it is hoped by the author, and other persons involved in this research, that these reports will provide useful information to the sponsors of this work, Atlanta University.